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HEAD INJURIES*

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Faced with the accusing figures of 36,400 persons killed in a year; 107,000 hopelessly maimed; 1,170,000 seriously injured; an annual loss of $1,600,000,000 in earning power and property, and the curve steadily rising as a result of trauma associated with automobile accidents alone, I offer no apology for choosing the subject of "Head Injuries" for your brief consideration.

According to Ramsdell "the wide distribution of motor traffic has, has of necessity, placed the responsibility for the management of these accident cases in the hands of the general surgeons of the country, inasmuch as 64 per cent of these patients are admitted to the smaller hospitals in the rural districts." Moreover the importance of head injuries is proved by the attention given the subject in the current medical literature. It is equally as important to note that there still exists much confusion in the management of these cases.

For the purposes of this article the term head injury is used so as to include all trauma. This includes the so-called cerebral trauma, concussion of the brain, contusion of the brain, lacerations of the scalp, and such complications as fractures of the skull, with extra or intra-dural hemorrhage, and an increase in intracranial pressure.

Even to this date the pathology underlying concussion and contusion of the brain is not quite clear. After a blow on the head sufficiently severe to produce unconsciousness there is a primary anemia followed by edema, which may be slight or severe.

If the edema is severe with more than an absorbable amount of fluid, an increase in the intracranial tension occurs, due to the rigidity of the skull. This increase in intracranial tension may mean life or death. This is the essential feature to bear in mind in every case of severe head injuries.

As Ramsdell has so nicely stated, "The most difficult, while at the same time the most important part in connection with head injuries, is to estimate the extent of the pathology within the damaged cranium, for rational treatment can be based only on this information. Therefore, each case must be studied individually, for many times it is impossible to know what has taken place within the skull of the unconscious patient."

Skull fractures per se, are important only in so far as they affect the intracranial contents, either the brain, its membranes or blood vessels. Fractures are of immediate importance only when depressed on some vital part of the brain, compound, or with active hemorrhage. This point cannot be over-emphasized. Even the speedily made roentgen ray pictures are not justifiable when shock is present.

Much has been written on the subject of head injuries during the recent past, due to the rapid increase of these injuries and the lack of any accepted routine plan of treatment. Twenty years ago as Swift states, "each case was treated according to the plan of his medical attendant" and that usually consisted of an immediate rushing to the roentgen ray room and then to the operating room for a decompression, ignor-

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ing altogether the physiology of the circulation of the spinal fluid and the shock present. No wonder a 40 per cent mortality existed.

Fifteen years ago the writer read a paper before the Louisiana State Medical Society on this subject and made a plea that more time and study be given these cases. Then again eleven years ago, when the State Society met in our city, another paper on this subject of head injuries was presented, in which a plea for repeated observation and conservatism was made. My views expressed then are on record. Since that time much experimental work on this subject has been done and close study made with published reports upon hundreds of cases by various investigators. In this way a clearer understanding is fast being arrived at.

Head injuries may be broadly classified into three classes: Those with injury to the contents of the cranium, those head injuries without damage to the contents and thirdly, those injuries involving scalp, cranium and intracranial contents. From the standpoint of treatment these injuries may be classified into those cases which will recover with no treatment, those that are so seriously injured that no treatment will be of any avail, and those in which the outcome will depend entirely upon the methods of treatment. As Reed states, it is almost impossible during the first 24 to 48 hours to determine to which group a certain patient belongs.

For a better understanding of the symptom complex resulting from serious head injuries one should be familiar with the circulation of the cerebrospinal fluid and above all, remember how sensitive to injury is the area of the floor of the fourth ventricle and the medulla oblongata. It is now well known that the floor of the fourth ventricle is the vasoconstrictor center and the medulla oblongata the seat of consciousness. The French and English have both contributed valuable findings on the symptom complex of head injuries and this material is illuminating to read.

The past twenty years have taught us much about the symptoms of head injuries. Today we not only recognize the immediate or acute symptoms, but are forced to acknowledge that in some cases the remote symptoms are many, such as mental fatigue and changes, nervousness, visual complaints, body pains, gastric symptoms, plus the chain of symptoms characteristic of chronic subdural hematoma.

As a rule the acute symptoms are somewhat dependent upon the amount of trauma. Generally speaking, a patient with evidence of a head injury presents bruises, cuts or lacerations over the head, bleeding from the nose, mouth or ears, swelling about the eyes, a state of unconsciousness or a history of a period of unconsciousness. To this, in some cases, will be added compounded depressed fractures of the skull with active bleeding and profound shock; the most paramount symptoms being shock, plus hemorrhage, if hemorrhage be present. Next in order of importance is edema of the brain, which is soon followed by the all important increase of intracranial pressure. Very soon a patient may be in profound coma, with a fixed dilated pupil, a stertorous respiration, a varying pulse rate, or there may be wild delirium, with a moderately contracted pupil, depending upon whether the cortex or basilar region is most affected.

Some authorities lay special emphasis on the pulse and temperature. An extremely slow pulse of 40 beats signifies danger. A fast pulse of 120 to 130 signifies danger also. A pulse that has been beating steadily and then goes over 130 signifies that as a rule operative measures are not indicated. A sudden jump in pulse rate say from 50 or 60 to 140 in a short time, is a fatal symptom. The temperature in shock is usually low. A fever of 107 indicates hemorrhage in the brain substance. As a rule if the temperature, barring infection, does not go over 103 there is no alarm. A rapid rise to 105 or 107 is cause for alarm, as it indicates laceration of the brain substance or damage to the heat regulating center.

Many writers hold that the respiratory rate and character are the most sensitive indicators of brain damage and embarrassment. Temple Fay, who has contributed much on brain injuries, considers respirations a reliable and important index of the presence of increased intracranial pressure. If the respiratory rate is below 20 per minute, bearing in mind other vital signs, Fay thinks dehydration is in order. Many workers attach particular significance to

the appearance of Cheyne-Stokes breathing. On the other hand some workers attach no special importance to the respiratory rate and fail to find any striking characteristic change in the respirations.

After all the writings and teaching of Duret, von Burgmann, Leonard Hill, Cannon, Cushing and more especially Kocher and the acceptance of Kocher's teachings by most text books, we are still in a quandary about the symptoms of severe brain trauma and the behavior of systemic blood pressure, pulse and spinal fluid pressure. No doubt you recall the teachings of Kocher and how he divided brain compression into four stages. To Kocher's work has been added the clinical and experimental work of many others, especially McClure and Crawford, Cushing, Dandy, Eyster and more recently Trotter and Howe. Still more recently appears the illuminating studies of Browder and Meyer from the department of Neuro-Surgery of Kings County Hospital and Bellevue Hospital. The latter two authorities state—"Following these experiments, the majority of writers and teachers, have concurred in the following:

1. The essential clinical important effect of many intracranial lesions is the production of increased intracranial pressure;

2. Increasing intracranial pressure produces its general and vital effects through the medullary centers;

3. The symptoms of increasing intracranial pressure are: (a) Rise in blood pressure; (b) slowing of the pulse rate (not constant); (c) slowing of the respiratory rate, stertorous, deep breathing, becoming apnic and wave-like; (d) rise in temperature; (e) headache; (f) vomiting; (g) stupor, unconsciousness, coma; (h) papilloedema, and conversely the existence of certain of these symptoms is a reliable index of both the degree and presence of increased intracranial pressure;

4. Death from over-stimulation of medullary centers under the influence of steadily increasing intracranial tension. Thus it is that the blood pressure falls, the pulse races and respiratory failure ensues".

So then, after much work and investigation since Duret's time in 1870, when there appeared a fresh stimulus to investigative work on head injuries, on down to the present time, I repeat, there is still much confusion and no one train of connected symptoms to be expected or looked for. Especially is this true in those injuries associated with brain laceration and subdural hemorrhage. In these cases the ventricles and spinal cord may soon be flooded with blood until the medullary centers, the heat regulating centers and entire area of the floor of the fourth ventricle are so encroached upon that such a rapid succession of symptoms takes place until it is impossible to correlate them. Others are of such a minimum degree that no alarming symptoms are present; they are neither minor nor severe, yet the outcome is problematic and the management both difficult and challenging to the medical attendant.

In reviewing the recent literature on the subject of management or treatment of head injuries one is impressed by the radical and fundamental differences of opinion expressed by authors of equal authority and experience. Were the treatment of these cases thoroughly standardized and established, the literature and present day writing on this subject would not be so voluminous. There is no one accepted method of treatment. After diligent study and tedious perusal of this vast literature one is left at the crossroads to select whichever method is most applicable to his particular case, hence the importance of a thorough knowledge of the disturbed physiology and the mechanics of head injuries.

At the present time conservatism is the one plan which seems to be accepted by a large majority of surgeons as paramount to all other plans. Next in order is complete rest and appropriate treatment for shock. The methods of treatment most in dispute today are dehydration by intravenous solutions, decompression by lumbar drainage, sedation with morphine and operations with especial reference to the indications for operations. Ramsdell says, from Baltimore comes a warning against lumbar puncture and dehydration and an endorsement of subtemporal decompression to relieve increasing intracranial pressure; from Philadelphia comes the strongest recommendation for dehydration; from Boston comes advice to begin dehydration early, reserving spinal puncture

and operation as successive steps to be used in combatting an increasing intracranial pressure; and from Chicago, after a careful resume of 2,445 cases, comes advice similar to that emanating from Boston, with perhaps less enthusiasm for spinal puncture and a strong warning against early operation, especially in the presence of shock. It seems that the only point one is able to find on which there is consistent agreement is that it is the increased intracranial pressure which is dangerous to the patient's life, and probably causes his death, and that this being so, it is the item which merits prognostic and therapeutic attention. It is the manner in which this one symptom is to be treated that so many differ. That each and all of these methods enumerated are advantageous in a particular case, I think cannot be questioned. It remains to select the particular plan of treatment for the particular type of case to be treated.

As many patients with acute head injuries, when first seen by the surgeon, are in surgical shock, it is imperative that the shock be treated before the institution of any other therapy. Many say morphine, however, should not be used unless the patient is delirious or uncontrollable because of its depressing effect on respiration and masking symptoms. Hypertonic solutions of glucose should be used in only the severe cases as it causes a secondary increase in intracranial pressure. Hypertonic saline should not be used on account of the salt clinging to the brain cells and attracting fluid. Fay uses strychnine or pituitrin instead of caffeine and adrenalin. As soon as the patient's condition permits, external wounds should be cared for; hemorrhage, if any, has been controlled while directing the care for shock. A neurologic examination should follow, especial care paid to the cranial nerves, pupillary reflexes, discharge from nose or ears and evidences of paralysis in any extremity.

There need be no special hurry for a roentgen ray examination, however this should be carried out without unnecessary delay to determine the presence of a depressed fracture probably causing a torn meningeal vessel. However in the presence of a depressed fracture there should be no hurried operative procedures in the absence of active bleeding or pressure symptoms on some vital area of the brain. A diagnostic spinal puncture may be done in certain cases to determine the presence of blood and, if present, then done therapeutically once daily to relieve the bloody fluid. Much blood is not readily absorbed from the ventricles. Blood pressure readings should be made at regular intervals and an accurate record started of pulse, temperature and respiration. Above all maintain quiet and rest, with sedative drugs if necessary.

If, after a painstaking examination and observation, with recorded findings, one finds a gradual or a rapid increase in intracranial pressure, an increase in blood pressure with irregular respiration, a decision as to some plan of procedure must be decided upon. One of the plans of treatment mentioned may meet all requirements of such a case or it may require a combination of the methods.

Conservatism and non-operative treatment for most cases of injury is suggested as the better plan at the present time. At the same time one must bear in mind that there are some cases which best respond to operative methods or a sub-temporal decompression.

In the more severe types of injury with ventricular hemorrhage it would appear that spinal drainage would be indicated, notwithstanding that Dandy and other good surgeons say it is a dangerous plan. Personally I believe the idea of herniation of the brain stem and sudden death is exaggerated. However, extreme caution should be used and the drainage slowly done.

It goes without comment that there are some cases of head injuries, those with definite symptoms of localization or limb paralysis, where operative treatment must be carried out as early as possible. Also, compound fractures, with or without comminution should have attention as soon as shock is successfully treated. A depressed fracture without focal symptoms does not require immediate operation.

Rest should be enforced in all simple, moderate or severe head injuries, for a length of time proportionate to the severity of the injury.

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DISCUSSION

Dr. Alton Ochsner (New Orleans): In 1931, we studied 1500 cases admitted to the Charity Hospital, New Orleans, in the period 1910-1930. It was interesting at that time to see that the mortality rate was exceptionally low in the Charity Hospital series, and the reason was quite obvious in these cases in contrast to the other series throughout the United States in which there was a wave of enthusiasm about operative treatment. There has never been this wave of enthusiasm at Charity Hospital; the incidence of operations has never been higher than 5 per cent; about 1910-1915 it did approach 5 per cent. The general operative incidence has been 1 per cent in major head injuries admitted to Charity Hospital. The other patients were treated conservatively and the mortality rate has been practically very low (about 8 per cent) in these twenty years. This is probably why the mortality rate in the Charity Hospital series is much lower for this period of time than that seen in other series.

We have used ultra-conservatism in this series unless there was a definite indication for operation, such as compound fracture, in which debridement should be done. In those in which there is marked decompression, surgery should be done.

We have used dehydration, using it of course only after patients have recovered from shock for it is important not to use dehydration when the patient is in shock. We have abandoned the use of hypertonic saline because of the subsequent rise in pressure, and we now do not use glucose. We now use 25 per cent sucrose intravenously in amounts from 25 c.c. to 100 c.c., depending on the condition of the case.

We use repeated spinal tap as a diagnostic and prognostic procedure. We feel that we can follow these cases and can gauge their progress better with that observation than we can otherwise.

The conclusion that can be drawn from the Charity Hospital survey is that by resorting to conservative measures and operating only when there is a definite indication, the mortality rate in general, in the hands of the average surgeon, will be much lower than if one resorts to operative procedures more often.

Dr. Ernest Sachs (St. Louis): Dr. Gray's paper is an admirable resumé of the situation as it exists today. One of the things that he emphasized, which could not be emphasized too strongly and with which I heartily agree, is that there is much confuson how to deal with head injuries. The particular reason for this confusion is that men do not realize fully which of the conditions in a head injury can be treated and which cannot. In any head injury of any extent, there is always contusion and laceration of the brain. There is nothing that one can do up to the present time for contusion and laceration of the brain. The only conditions for which anything may be done are either frank hemorrhage, early or late, and cerebral edema. I am delighted that Dr. Gray laid such stress on the factor of cerebral edema, because I believe with him that cerebral edema is one of the most important factors in causing the death of the majority of cases of head injury.

It, therefore, resolves itself into the best way of combating cerebral edema. One statement which appeared in the literature some years ago and came from the Baltimore Clinic, which I think has done untold harm, was that the use of dehydrating substances was of no value because of the development of secondary edema. Still anybody who has treated head injuries is perfectly well aware that nobody thinks of giving one injection of whatever substance they want to use to overcome cerebral edema and then leaving it at that. You have to continue with the injections intravenously or give it per rectum, either will do, in order to overcome cerebral edema. We have used magnesium sulphate per rectum every four hours as it takes four hours for secondary edema to recur. We have used glucose intravenously, and we have in the last year or two been using 50 per cent sucrose. I am not quite sold on the sucrose idea as yet, because we have a few observations—not enough to record as yet—in which there was a rise of blood pressure following the injection of sucrose, and not a fall as was claimed from Cannon's Laboratory, where I think sucrose was first tried on animals.

I feel strongly on the subject of the use of morphine in head injuries. It is the drug that is most frequently used and is, in my opinion, a very dangerous drug. In my clinic we never give morphine. On account of the depressing effect on the medulla, and the respiratory symptoms in head injuries, one always has to be very careful about using it.

Regarding the use of spinal puncture, I regret I must disagree with Dr. Ochsner for two reasons. First of all, the spinal pressure reading, clinically we have demonstrated over and over again, is no

indication of the amount of increased intracranial pressure that is present. Only last week, I saw a patient on whom we were not certain of the diagnosis and did a spinal puncture and reading, and that patient had a pressure of 15 mm. of water and had a brain tumor with as marked intracranial pressure as I have ever seen. It is possible in such cases that the spinal pressure may be low and that the intracranial pressure may be high because there is a block in the posterior fossa, so that the reading of the spinal pressure is greatly misleading.

The second objection is that I have seen repeatedly a number of deaths following spinal puncture and I have seen any number of cases in which symptoms have been markedly aggravated following spinal puncture frequently after several hours.

And third, my objection to spinal puncture is that I feel convinced that withdrawal of bloody spinal fluid has no therapeutic value. It was claimed by Dr. Bagley of Baltimore several years ago that blood in the spinal fluid is harmful. If that is so it would be so in practically every case in which a brain tumor has been removed. It is an extremely common observation that there is blood in the spinal fluid following the removal of a brain tumor and it never does harm.

Of course, there are a great many other questions that one would like to speak of, but I am afraid I have used up too much time. I do think this is a very important subject, and in conclusion, I would say the most important phase of the treatment is first of all, as Dr. Gray said, conservatism, and in the second place, treating the cerebral edema.

A PRACTICAL TUBERCULOSIS CASE-FINDING PROGRAM*

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Knowledge is a wonderful thing, but the proper use and application of knowledge is even more wonderful. It has been said, and truthfully so, that without the addition of a single new fact regarding tuberculosis, this disease, which today is one of our major health problems, could be brought under control in a few decades! A strong statement,—yes, but one that challenges every health department to do more in controlling tuberculosis. Adequate hospitalization for the tuberculous will require quite a financial outlay, but tuberculosis case-finding is now within easy reach.

Tuberculosis still kills over 1500 persons annually, in Louisiana, and makes invalids of thousands of others. The loss of life, the disruption of homes, and the great economic loss from tuberculosis is bad enough, but, when we realize that a new crop of tuberculosis problems is bound to result from improper control measures, we see the establishment of a vicious cycle. It is not pleasant to think of one's relatives or close friends having unrecognized tuberculosis and unwittingly spreading their disease to others, or to think of tuberculous maids and cooks working in our homes in intimate association with our children. This situation does exist and it is imperative that we correct it. Such statements are not made to frighten, but are intended to arouse a somewhat jaded interest in the whole problem of tuberculosis.

To think of tuberculosis as a shameful disease, prevalent only in the lower economic groups, is a misconception. We must look for it everywhere. For example, a study of the medical students at the University of Pennsylvania, in 1929 and 1930, showed varying degrees of demonstrable tuberculosis in over ten per cent of the group. Of course, these are not typical findings for the population in general. Fortunately, in rural states, where opportunity for exposure is less, we can expect a relatively low tuberculosis incidence.

For years, voluntary and official health agencies have conducted tuberculosis educational campaigns, stressing the importance of early diagnosis of tuberculosis. With the exception of a few hospital clinics and still fewer voluntary clinic groups, very little of this work has been done. In rural areas, particularly, roentgen ray diagnosis of tuberculosis has been available to only the select few. Physicians have been most cooperative in trying to promote case-finding; but, without some arrangement for state assistance, programs have died an untimely death. The ground work has been laid in Louisiana for a state-wide case-finding program, to serve, primarily, as a consultation service to the physicians. This approach immediately enlists the assistance of some 2115 physicians in the plan.

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Tennessee, North Carolina, Virginia, Alabama, Georgia, Arizona, and Mississippi have had travelling clinics in operation for several years. More recently Texas, Missouri, Iowa, Illinois, Pennsylvania, Florida, South Carolina and other states have started or will start similar programs. Thus we see that the idea is neither new nor untried. It is well, however, to analyze the various features of a chest clinic, to justify its use in any given state. Practical and economical clinic operation is necessarily the goal.

For successful operation, any state chest clinic service must meet with approval by the medical profession. Clinic policies and the manner of operation will determine the extent of the cooperation given the work, by physicians and the public. The local health units will be called upon to provide the work-up of clinics and a follow-up service. All associated agencies in the area should be familiar with the aims and policies of the clinic.

The story is told that the trustees of the University of Pennsylvania were anxious to check on Sir Wm. Osler's social manners before offering him the professorship of Medicine at the University. It seems they were satisfied with his medical qualifications, as they might well have been, since Sir Wm. Osler was one of the outstanding physicians of modern times. A dinner was arranged and cherry pie was served as dessert. Sir Osler's correct choice of silver for the pie was to determine his being selected as professor of medicine. Evidently, Sir Osler chose correctly.

I cannot vouch for this story, but I can draw an analogy and assure you that the choice of proper equipment and the adoption of proper clinic policies will properly launch any clinic service.

Until recent years suitable portable roentgen ray equipment has been the stumbling block to a travelling clinic, but now highly satisfactory equipment has been developed for this work. It matters not whether a standard automobile, a truck, or a trailer is used to transport the equipment, so long as the equipment itself meets the rigid standards set for good diagnostic chest films.

Various arrangements have been made for the taking of chest clinic histories, but, in my estimation, having histories taken in triplicate, on a typewriter, by a nurse well trained in tuberculosis work, is the ideal arrangement. This provides the profession with standardized, legible records that popularize the service.

The forms needed by the clinic are best printed on one side only, to allow of easy copying in triplicate. This gives a copy for the Central Office, a copy for the local health unit office, and a copy for the physician referring the patient to the chest clinic.

Indiscriminate studying of everyone who comes to the clinic out of curiosity is obviously impossible. Selecting of those eligible for study should be made well in advance of the clinic's visit. The securing of clinic material is, logically, the duty of the local physicians with the local health unit personnel assisting. In the beginning, every effort should be made to direct attention to the group that will provide us with the greatest number of open cases of tuberculosis. Those with suspicious chest symptoms and those with positive tuberculin reactions who have been in contact with known tuberculosis will make up the best group for study.

It is fairly easy to tuberculin-test large groups in schools or mills, but, with limited funds, taking the clinic's time and films to check these groups is unwise. This statement may be criticized by some of you who feel that the educational value of school tuberculin-testing offsets its rather questionable case-finding value, but even in New York State, where adult case-finding has been in progress for years, the health authorities feel that tax monies are best spent on selected groups of individuals rather than school groups. Children always present an appeal, but such tuberculin programs should be relegated to secondary consideration. When voluntary agencies or foundations are paying for school studies, there is some justification for this work being done as an educational program.

In arranging groups for clinic study, negroes should be given more than passing consideration. Tuberculosis mortality and morbidity rates are much higher for negroes than whites. We should allocate clinic service on a needs

basis rather than on a population basis. For example, a negro population of only one-third of the total in a given parish might well be accounting for two-thirds of all tuberculosis deaths in that parish. In the South, the use of negroes for domestic help makes it doubly important that they be studied to protect our white households.

It is not desirable to utilize the state clinic for the repeated examination of known tuberculosis cases. This practice would utilize the clinic case-finding time for work that should be done by local physicians. However, to be properly classified as to the extent of disease, those patients who have been diagnosed tuberculous by physical and sputum examinations should be admitted once to the clinic for a roentgen ray. Proper classification of tuberculosis is very desirable now that the institution of surgical collapse proceedings in the treatment of tuberculosis requires knowledge of the type and extent of the lesion. At this point, let me say that the mere finding of tuberculosis without instituting some isolation and treatment measures has accomplished very little.

Now, to outline a plan of state chest clinic procedure:

Before field work is begun, the state clinician meets with the health officer and the doctors in a given parish. The clinic policy and plan is presented and discussed by the group. A clinic date is set, several weeks in advance, by the Central Office. This allows time for the local Health Unit personnel to contact the patients for the doctors and to list them for the clinic. Approximately thirty patients are scheduled for any one day. The preliminary clinic visit for the taking of histories and the making of chest roentgen rays is conducted by a special trained nurse historian and a nurse roentgen ray technician. The films and histories are sent to the Central Office, are developed and read. One copy of the history and roentgen ray report is kept in the Central Office, one copy goes to the referring physician, and one copy is filed in the local office. Immediate delivery of the physician's copies of the roentgen ray reports is desirable.

Those with positive roentgen ray findings are invited to return for a physical chest examination on a set day, and the physicians are urged to come in at that time. The state clinician makes the physical examinations and records his findings. The patient is instructed to see his physician, later, for the completed clinic report. This consultation aspect of the clinic is adhered to rigidly. The clinician, on his visit to a parish, discusses various phases of tuberculosis with the physicians, individually or in groups.

Home visiting services of the local health nurse are offered to the physicians for their tuberculosis patients. Upon request, the roentgen ray films of the state clinic will be loaned to physicians for comparison with future films. Suggestions for laboratory work may be made to the physician, to determine activity in his patients, but no treatment recommendations will be written on the reports.

It is to be stressed that the state clinic is not to replace individual effort by the physicians in finding of pulmonary tuberculosis. This service is to strengthen the work done by the physicians and to encourage their making diagnoses of tuberculosis, if possible, by repeated physical and sputum examinations in advance of the clinic visit.

Eventually, it is hoped that our field case-finding program in Louisiana can be more closely coordinated with tuberculosis sanitorium work over the state. Bringing tuberculosis into the open will give everyone a chance to strike it down!

MODERN TRENDS IN PUBLIC HEALTH WORK IN LOUISIANA*

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NEW ORLEANS

About a half century ago Congress enacted laws charging the Public Health Service with the duty of preventing the interstate spread of disease. The accepted method of prevention and control of disease was almost entirely limited to quarantine. In 1855, forty-three years after Louisiana became a state, there was created a joint City and State Board of Health with powers extending over the state.

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This was one of the first established state boards of health in the United States, and it was the direct result of a yellow fever epidemic in 1853 and 1854. The primary function of this board of health was the protection of the city and state from yellow fever. Few other activities were even attempted. In 1898 the state legislature of Louisiana created a state department of health, separate and apart from the City Board of Health. The creation of this board of health was to give power to promulgate and adopt a sanitary code.

The spread of communicable diseases from one state to another can best be prevented by eliminating local conditions under which such diseases arise. The responsibility, therefore, in control and prevention of the spread of disease was then and is now shared jointly by local, state and federal governments. More or less limited appropriations have been made by Congress for this purpose each year since 1917. However, in 1914, Congress made a very small appropriation to begin the study of rural living conditions. These studies were for the purpose of: (a) ascertaining what were the sanitary conditions of the rural districts of the United States with particular reference to that bearing on the interstate spread of communicable diseases; (b) determining improved methods for the correction of insanitary conditions; and (c) determining to what extent, in the average rural communities of the United States, persons with responsibility of citizenship would carry out indicated measures which were really in their means, to correct insanitary conditions which had been well pointed out to them as a serious menace to the health and lives of themselves and their families. The Public Health Service and the Rockefeller Foundation in cooperation with official health organizations of a number of states, during recent years, have striven earnestly to ascertain how best to safeguard the health of the distinctly rural population. These together with other agencies, nearly a quarter of a century ago, came to the conclusion that full time local organizations, manned by well-trained personnel on a permanent basis could properly correlate and integrate the various phases of a sensible public health program. Society has developed into a more and more complex organism. A great many functions which formerly were left to private initiative and the common sense of the individual have become the work of the administration. The citizens of a modern community had to assume a great many duties which had been unknown to them before. If we wanted to build a home formerly, we could do it as it pleased us best. Today, we are not free in this respect. We have to adapt ourselves to an altogether new idea. Usually we are told what to do according to regulations. We send our children to school whether we like it or not. We accept these regulations because we recognize the fact that they benefit, not only the community, but ourselves as well.

We now find ourselves in America not only in a new era, but in an entirely "new deal" age. This era is most certainly distinguishable from the past in at least one respect: It is an era of social action in accordance with conscious social planning. We have discovered that our conditions and destinies can be more and more definitely controlled. Whether they are wisely controlled depends upon the nature of our ideals and upon the measures we take to perfect them. Surely there is no sounder ideal than that more than once expressed by our President when he stated that "The State's paramount concern should be the health of its people." There is no field of social effort in which greater success has been demonstrated than in certain aspects of curative and preventive medicine. I might also add that there is no direction in which there is greater promise of success than in public health and medical care.

Until recent years the public health service of many states had lagged behind in the development of service with the larger municipalities, and in this connection we must remember that municipal health organizations historically antedate state health organizations. One of the most outstanding and impressive developments of the last decade is the very definite trend to greater emphasis on the importance of high-grade technically trained public health workers. There is a universal demand for epidemiologists, laboratory workers, sanitary engineers, properly qualified public health

nurses, medical officers and others. There is nothing untried or unproved in the method of federal cooperation with states and local health agencies. For the past twenty years, the Public Health Service has been actively engaged in cooperation with the states in the organization and maintenance of state and local health services. This cooperation has been conducted through technical assistants, financially aided to a limited degree, and the assignment of Service officers on request from states to duty within the states, and it is only through such actual experience and thorough preparation that we are led to such sound conclusions concerning public health administration in this country.

Louisiana established its first full time parish health unit in 1921, in Washington Parish. This was a new activity for Louisiana, but the method had been tried and accepted as a success in certain southern states. On January 1, 1927, there were only ten parishes in Louisiana with full time local health service with forty-five public health workers, whereas on December 31, 1927, following the Mississippi flood, there were eighty-five public health workers serving twenty-two parishes on full time basis, and prior to the availability of funds from the Social Security Act, on Juanary 1, 1935 there were 142 public workers serving 34 parishes, and at present there are approximately 281 public health workers serving 38 parishes, or over 60 per cent of the total rural population of Louisiana, and it is very remarkable that not a single parish that has adopted this type of service since 1928 has discontinued it.

Under the provisions of Title VI of the Social Security Act, payment from allocations was made to the Louisiana State Health authority on February 1, 1936, for the purpose of assisting the State Health Department in strengthening certain bureaus or divisions and to provide additional facilities for promotion and administrative guidance of state, local (district, parish and city) health departments; also for the purpose of training health personnel. This payment was made to the State Health authority after being approved by the Surgeon General of the U. S. Public Health Service. It has been the policy of the Public Health Service to give its approval to any plan that is scientifically sound and which gives promise of an adequate return on the investment. The Service has particularly refrained from recommending a standard pattern of organization and administrative practice. On the other hand it has encouraged the adoption of plans adapted to the particular needs of each state and has encouraged experimentation in its different methods of administrative practice, and, above all, the Service has stressed that the work is to be performed within the states and not to be performed directly by the Public Health Service, but that it is to be carried out by and administered under the supervision of local and state health authorities, under the authority of state and local laws and regulations, in the same manner as the regular activities of such authorities have been performed heretofore. All funds paid to the states become state funds, just as if they had been appropriated by the state legislature, provided they are used for no purpose other than that for which they were designated by Congress. All persons employed on the work within the states and local communities are state and local employees, selected, appointed and paid by the state or local authorities. Since the availability of funds from the federal government under Title VI of the Social Security Act, the state health department staffs have been strengthened; medical officers, nurses, sanitarians and others are now receiving postgraduate courses in public health administration, industrial hygiene and tuberculosis control; travel grants have been provided for other technical workers; some very essential fundamental services have been materially augmented. The federal government has at least made a beginning in assisting the states and local areas in the development of a public health program.

The most important single factor in the success of a public health program is the fitness of those to whom the administration of the program is entrusted. Therefore, the opportunity offered for the training of public health personnel under the provisions of the Social Security Act was one of the first and most important parts of the program to be accepted by the Louisiana State Board of Health.

There has been a great deal of undesirable and unnecessary unrest among the personnel of health departments. In many organizations, whether state or local, there have been disturbing changes of personnel. In some instances, due to political expediency, competent workers have been unceremoniously dismissed while incompetent individuals have been retained. Only too often the funds for the maintenance of efficient health services have been curtailed or withdrawn as the first rather than the final step in an economy program. Needless to say, such interference with plans and personnel has created an impression that public health work is a semi-permanent activity of dubious value that may be turned off and on like a controlled stream of water. The time is now at hand for removing permanently the hindrance to an enlightened and progressive public health viewpoint. In no way can this be better done than by assuring adequate salaries, undisturbed tenure of office for competent persons, and sufficient training to insure efficient service. The belief may be expressed that when the public health workers become proficient in their professions through proper academic and practical training that commensurate salaries and prolonged tenure of office will follow as a matter of course. A health department should be an integral part of the local government, on an equal footing with school, justice, and police administrations. The opportunity offered for the training of public health personnel under the provisions of the Social Security Act will undoubtedly aid in attaining the objectives just mentioned.

Public health work should be a profession, as clearly defined as that of law, medicine, engineering, pedagogy, or other specialties. Moreover, a public health career should be as attractive, lucrative, and permanent as any other professional field. While the opportunities for financial advancement may not be as promising as elsewhere, there is always the prospect of affording service to humanity, through the prevention of unnecessary illness and premature death.

Recognizing that the training of public health personnel is a pivot around which the health provisions of the Social Security Act revolve, the Conference of State and Territorial Health Officers, which met with the Public Health Service in June, 1935, devoted a goodly share of its attention to this phase of the subject.

The Conference recommended that $1,200,000, or 15 per cent of the proposed $8,000,000 annual appropriation, be set aside for the prompt development of qualified personnel designed to strengthen and enlarge the staffs of state and local health departments. In furthering these objectives it was recommended that the Public Health Service proceed to develop suitable training centers at existing institutions, conveniently located to serve certain groups of states, and that the cost of aiding these institutions, where necessary, be prorated among the states to be served by the proposed centers. Furthermore, it was suggested that funds be granted to the several state departments of health in accordance with their needs, as certified by the state health officers, for the purpose of paying living stipends, tuition, and traveling expenses of trainees who would be selected by the state health officers for attendance upon courses to be given at the training centers.

It is desired to emphasize that selections of public health trainees are to be made by state departments of health and not by the Public Health Service. Moreover, it is expected that positions will be provided in state and local health departments for those who have satisfactorily completed the course of training. Therefore, it is essential that the nominations of trainees be correlated with the plans and financial resources of each of the state departments of health.

The Louisiana State Board of Health and its staff of public health workers long ago realized the fundamental importance of close cooperation with the medical profession. Therefore, a plan to conduct lecture courses in the councilor districts of the State Medical Society was submitted to a joint committee on maternal welfare and medical education for their review, and on August 11, 1936, the following plan was adopted:

(a). The Course on Obstetrics be conducted beginning the early part of October and to be

carried on through November and December.

(b). The Professors of Obstetrics of Tulane University and the Louisiana State Medical Center be requested to prepare an outline of lectures to be followed by the lecturers.

(c). The Director of the Division of Maternal and Child Health would select the towns wherein the courses would be conducted and contact the District Councilor relative to district committees.

(d). Editorials be published in the State Medical Journal.

(e). The President of the State Medical Society be requested to write the District Councilor explaining the plan and urging cooperation.

(f). Pamphlets, folders and letters be prepared and mailed to all physicians in the state.

(g). Negro physicians be invited to attend the courses.

(h). The lecturers be available for consultation during their stay in town.

(i). The lecturers to receive an honorarium of $25.00 per lecture day and traveling expenses. At this meeting a group of outstanding obstetricians were selected to be invited to conduct the courses.

During the months of August and September the organization and preparation was carried on in the districts. Committees were appointed, schedules arranged, and lecturers assigned. Several moving picture films were purchased and some borrowed. It is estimated that three hundred physicians attended the lectures.

Since such pleasant relations have been assured from your State Medical Society in the development of a maternal and child health program, let us not for a moment overlook the value of the family physician in the whole scheme of things. First of all, no public health program will succeed without the active participation of the family physician. With all of our success in the campaigns for early diagnosis to uncover early tuberculosis, syphilis, cancer and other diseases, remember that the family physician on the active firing line is and will continue to be one of the most important links in the entire chain between the public and the health officer. Tuberculosis control service is essentially diagnostic and consultant to the medical profession, the object being to detect cases of tuberculosis in the early curable stage, to the mutual advantage of the physician and patient. Already plans are well under way in Louisiana for the development of case finding clinics under the very closest cooperation of the local physicians.

Syphilis, not unlike tuberculosis and diphtheria, is a communicable disease and should be treated as such. This disease has been brought out in the open and never before in the history of organized medicine has there been such a unanimous response on the part of the medical profession to take an active part in any public health program as is now being shown in syphilis control. At the last conference of Presidents and Secretaries of State Medical Societies, the conference unanimously endorsed the request of the Surgeon General of the Public Health Service for the appointment of a committee of each State Medical Society which would study the problem of the state and recommend to the state health officer and to the Surgeon General of the Public Health Service a practical, common sense, state-wide plan for the control of syphilis. Many of the states have already appointed a committee and thirteen submitted at least a preliminary plan. The American Medical Association has taken an active part. At a cost of from twenty to thirty thousand dollars it has joined with the Public Health Service in an effort to teach the physicians of the country the essential facts of syphilis diagnosis and treatment through a talking-motion picture to be shown to every county medical society. The public and the profession are now united in demanding action. A few states have planned excellent programs, but none as yet have put them into full execution. The minimum measures should include the appointment of a full time venereal disease control officer under the supervision and direction of the state health officer, this physician to be trained in the clinical as well as the public health aspects of the problem; the free distribution of anti-syphilitic drugs; the standardization and improvement of the laboratory diagnostic service, the development of an epidemiologic service and a great improvement

in treatment facilities; more efficient case reporting and, above all, the early recognition and treatment of all cases of syphilis.

Most certainly plans will have to be developed for either cooperative clinics, or part time clinicians or some method involving a fee system for physicians who devote their time to the treatment of this disease. Whatever system is developed, it will have to be done under the supervision of the official health agency in the very closest cooperation with the parish medical society. In the development of any communicable disease control program, whether it be the administration of toxoid or antitoxin for the prevention of diphtheria, typhoid inoculation, smallpox vaccination or the treatment of syphilis, it is essential, first of all, to develop a sound, well organized public health program with full time, carefully selected, well trained personnel in charge of the program, so as to provide continuous and full time local health service.

Specific plans should also be made to organize as rapidly as possible full time local health service in every parish within the State of Louisiana and, above all, the very closest cooperation should be maintained between the active practicing physicians, the public and the official health authorities.

I also want to take this opportunity to congratulate the profession, the official health agencies and the public in general for the remarkable, well-planned, sound program that has been so carefully developed in the State of Louisiana.

DISCUSSION

Dr. R. W. Todd (New Orleans): The realization of the joint responsibility for the prevention of the spread of disease by local, state and federal authorities is evident when all are willing to cooperate by the spending of both time and money. This millennium seems to have come or at least to be on its way. As a people we have come to accept regulation as a matter of course. Now if these trends are used to effect a well-rounded health program, a program consistent with the recognized facts of science and with conscious social planning, something will have been done for Louisiana of which the medical profession may be justly proud. Scientifically sound and socially adequate plans should yield huge returns.

Social Security is a new trend. In Louisiana, it has already augmented the existing health organizations with funds that have brought an increase of trained personnel and an increase of activities. A sense of permanence, the recognition of the professional status of the health worker, added to adequate financial return, will surely bring about increased efficiency in health work. To a person who knows that his position is secure from unjust dismissal, specialized training for increased efficiency is not a luxury and a hazard but a necessity.

The present maternity and child hygiene program is an example of increased activity due to increased funds. Aid to crippled children, tuberculosis control, venereal disease control are efforts sure to follow. The full cooperation and unfailing aid of the medical profession has helped the health worker in the past, and it is the intention of these same health workers to be deserving of the continued good will and aid of the medical profession.

LYMPHOGRANULOMA INGUINALE*

(LYMPHOPATHIA VENEREA)

J. W. TEDDER, M. D.†
NEW ORLEANS

Lymphogranuloma inguinale is a chronic low grade inflammation of the lymphatic nodes, of venereal origin, resulting in complications of fistulae, esthiomene, or anorectal syndrome in an estimated 50 per cent of infected persons. This clinical picture has been described under a variety of titles since the middle of the 19th century. How long previous to this time the disease has existed cannot be definitely stated. Coutts[1] interestingly traces reports of a similar condition which was known to the Greeks and Romans as "pannus" or "inguen" and to the Arabs as "al-thun". Incan pottery depicts lesions very much like our present day genito-anorectal syndrome. According to some authors, the disease was common among Negro women in Africa long before the discovery of America.

Durand, Nicolas and Favre, in 1913[2] and again in 1922[3], recognized and pointed out the specificity of this disease, and its probable ve-

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nereal origin and described it as "subacute inguinal lymphogranulomatosis". Previous to this time and subsequently, this entity has been described under a variety of titles, including climatic bubo, tropical bubo, non-venereal bubo, subacute inguinal poroadenitis, the fourth venereal disease[4], strumous bubo of the groin, non-tuberculous granulomatous lymphadenitis, sub-acute lymphadenitis, maladie de Nicolas-Favre, hypertrophic bubo, and lymphopathia venereum. This last name, lymphopathia venereum, was suggested by Wolf and Sulzberger in 1932,[5] and much can be said in its favor. The older and better known name has a confusing resemblance to that of other diseases and does not embrace the various extra-inguinal localizations now recognized as being of identical etiology[6].

The relationship of lymphogranuloma inguinale to granuloma inguinale, syphilis, tuberculosis, Hodgkin's disease, chancroidal bubo, tularemia, pyogenic infections, and in certain parts of the world bubonic plague, has been clearly defined. Previously, many cases of this disease have, no doubt, been classified and treated as tuberculosis or syphilis. It is well to differentiate further lymphogranuloma inguinale from granuloma inguinale. Their greatest similarity is in name. The latter disease must be remembered as one of the skin and subcutaneous tissues and the Donovan bodies are found in scrapings from the lesion. Their only relationship is that both are disseminated by venereal contacts.

The term, lymphogranulomatosis, (Hodgkin's disease) is also confused with lymphogranuloma inguinale where their similarity is limited to their names.

The filterable virus thought to be responsible for lymphogranuloma inguinale has been the subject of much study. It has been successfully transmitted to apes, mice, rabbits and other laboratory animals. In the ape, the virus appears to have a special affinity for the central nervous system tissue where it causes an encephalitis. After passage through apes, it has been used to reinoculate human paralytic patients. The fact that the nerve tissue in apes is involved proves that the virus does not limit its actions to the lymphatic tissue. The virus loses its virulence very rapidly in glycerine, but retains it for 22 days in the frozen state.

Von Haam and D'Aunoy[7] have demonstrated the virus of lymphogranuloma inguinale in the spinal fluid of human cases. They believe that the disease is a systemic one and suggest that the fever and headache support this idea.

That the disease is predominately one of venereal origin cannot be doubted. Nicolas reported the case of three soldiers exposed to the same source, all of whom developed lymphogranuloma inguinale. One of the soldiers was married, and subsequently infected his wife. Cases are known in which the female acts as a host for the virus and can infect exposed partners without developing either clinical signs of the disease or a positive Frei test.

Hellerstrom[8] reports the case of a young surgeon who in 1904 acquired an infected finger, through a traumatic wound, while operating upon a patient with inguinal adenitis of unknown origin. The axillary nodes later became enlarged and fluctuating. Extirpation was necessary. Years later, in 1927, Hellerstrom did a Frei test on this individual and found it to be strongly positive.

The earliest cases of lymphogranuloma inguinale reported were in two children[9]. The first was a girl of 8 years who developed rectal manifestations. The second was a Negro girl of 10 years who reported to the hospital with an adenitis. While under observation, the Frei test became positive. The child's mother and a boarder in the home have positive Frei tests. The husband's test was negative.

Several extragenital cases have been reported involving the oral cavity with subsequent cervical adenopathy and fistulae. In these cases, after being confronted with positive Frei tests, a history of irregular sex habits was obtained.

Cases reported by Curth,[10] and by Buschke and Curth[11] had the primary lesion of lymphogranuloma inguinale on the tongue. Later, the cervical glands were enlarged and fistulae developed. The reaction at the site of primary inoculation appears to be greater in these cases than when the primary lesion develops on the penis. Here, the early lesions are comparable

with the esthiomene and elephantiasis of the vulvae.

DIFFERENTIAL DIAGNOSIS

In the differential diagnosis of lymphogranuloma inguinale, the history of the temporary presence of a small innocuous-appearing lesion on the glans penis 3 to 10 days subsequent to sexual contacts, and followed by an inguinal adenitis in from 10 to 30 days should immediately excite one's suspicions to the diagnosis of this disease.

Other diseases that must be considered in every case of inguinal adenopathy are: syphilis, chancroid, granuloma inguinale, tuberculosis, Hodgkin's disease, tularemia, and pyogenic infections. In the case of *syphilis*, either the chancre or signs of its past existence can be located, the nodes are sharply defined, hard and painless, and rarely suppurate unless complicated by other infections. The dark field examination and repeated Wassermann test are the deciding factor. *Granuloma inguinale*, as stated before, is a skin and subcutaneous disease of venereal origin. *Chancroids* and their accompanying gland changes are probably the most difficult to differentiate from lymphogranuloma inguinale. It must be remembered that the primary lesion is on the penis, and the glands are secondary in chancroids, while this is not true in lympmphogranuloma inguinale. The type of suppuration occurring in the lymph glands also differentiates the two diseases. In the acute painful adenopathy associated with chancroids, there is typically a massive suppuration, while in lymphogranuloma inguinale the nodes are less acutely inflamed and less painful, and there are multiple foci of suppuration. The bacillus Ducrey can be found in smears of the chancroid, and later there is a positive Ito-Reenstierna reaction. *Tuberculosis* and *Hodgkin's disease* are usually of a more generalized distribution and if sections are made, should offer little diagnostic difficulty. Tularemia and pyogenic lymphopathies reveal their point of origin to the careful examiner.

The greatest individual aids towards the correct diagnosis of the disease entity now recognized and diagnosed as lymphogranuloma inguinale are: (1) its recognization as a specific disease of venereal origin, and (2) the discovery by W. Frei[12] of a specific diagnostic test.

The material for the preparation of the Frei antigen is obtained from the suppurating glandular tissue of a known case of lymphogranuloma inguinale. This material must be obtained under aseptic conditions and it is preferable that the subject has not had any other venereal disease. The material may be obtained by aspiration or incision. Following sterilization, control cultures are made and if no growth occurs, the material is diluted with from 5 to 10 parts of sterile normal saline, depending upon its thickness. The antigen is then placed in sterile ampules for future use. The virulence and specificity of the newly prepared antigen should be tested upon a known case of lymphogranuloma inguinale and upon a control. The patient from whom the antigen was made cannot be used for this test of specificity. The technic of the Frei test consists of the intracutaneous injection of 0.1 c.c. of the antigen. The reading is made in from 36 to 72 hours. If positive, there will be an elevated erythema several millimeters in diameter. In strongly positive individuals, small areas of necrosis may occur.

Frei antigen prepared as outlined above, and kept sterile, may retain its potency for as long as 6 months or a year, but one must continuously test its virulence upon known cases and its sterility by cultural methods.

Frei antigen prepared from the brains of mice infected with the virus of lymphogranuloma inguinela was found to be unsuitable for routine diagnosis by Strauss and Howard.[13] They found that the brain emulsion from noninfected mice gave a reaction that is indistinguishable from a true positive test.

By the judicial use of Frei antigen, the diagnosis of lymphogranuloma inguinale can be satisfactorily made. It must be realized that the limitations of the Frei test are the same as those of other biologic tests, that is the presence of a positive Frei test does not always classify the disease under observation because of the fact that a previously acquired infection could account for the positive reaction.

It is well to remember that the very early case of lymphogranuloma inguinale will not give a positive Frei test. It is believed by some

authorities that the test does not become positive until the glands have increased in size and become fused to the skin. A more probable explanation is that the test becomes positive only after the patient's allergic mechanism has been stimulated.

Early cases of lymphogranuloma inguinale have a tendency to cause a false positive Wassermann reaction. Many cases have been treated as syphilis on the basis of these tests. If there is no evidence of a chancre, Wassermann tests should be repeated several times before treatment is started.

Several investigators have found that the serum of early cases of lymphogranuloma inguinale when injected intracutaneously into a known case gives a positive test, but this could not be repeated by other workers.

Once the Frei test becomes positive, it remains so for life, providing, of course, that the patient's allergic status is not disturbed by infection or lowered resistance. In such cases, a known positive Frei test may become negative.

CLINICAL COURSE

The clinical course of lymphogranuloma inguinale begins with the initial lesion, usually on the glans penis or in the urethra in the male, and on the external or internal genitalia in the female. The primary lesion may be anyone of four types, as described by Phylactos:

1. Herpetic type
2. Ulcerative type
3. Nodular type
4. A specific urethritis

All of these lesions may be transitory and pass unnoticed by the infected individual.

Within from five to thirty days after exposure, the patient becomes aware of a gradual enlargement of the inguinal nodes. His attention may be directed to this condition by the limitation of motion of the lower extremity rather than by pain.

In the male, the inguinal adenopathy is accounted for by the fact that the inguinal nodes and the deep iliac nodes drain the genital regions. The female genitalia drain directly to the lymph plexuses about the rectum, with the exception of the clitoris and external vulvae that drain to the inguinal nodes. This accounts for the difference in the clinical picture presented by the male and female and explains the formed belief that males were more frequently infected than females.

Following the development of lymphadenopathy or associated with its occurrence, the patient may have an elevation of temperature associated with malaise, anorexia and headache. The lymph nodes gradually become matted together and painful as they increase in size and fuse with the overlying skin. After this fusion occurs, the skin assumes a reddish-violet hue described by Phylactos as the "adenite violette" and considered to be very diagnostic. As the tension on the skin increases, it becomes shiny, and many areas of necrosis develop in the underlying glands. Perforation occurs and multiple fistulae are formed. This process may be repeated as other glands become involved.

In the female, the draining lymph glands about the rectum develop an inflammation that spreads to the rectal walls by way of the lymph channels. Following this, these vessels become thrombosed and result in inflammatory changes followed by scar tissue formation with narrowing of the rectal lumen. These changes occur for the greater part in the lower 6 cm. of the rectum and rarely extend higher than 10 cm. Occasional cases have been reported by Levaditi and Revant in which the rectum of homosexual males has been involved.

Seneque concludes that there are four types of lymphogranulomatous strictures of the rectum.

1. A pure stricture limited to the rectum.

2. A rectal stricture with elephantiasis of the external parts.

3. Rectal stricture complicated by fistulae, and formerly classified as tuberculosis, even when Koch's bacillus was not found.

4. Rectal strictures with pelvic cellulitis.

These types, therefore, include anorectal syphiloma with stricture of Fournier and esthiomene. (Chronic ulcer of vulva with elephantiasis.)

Associated with these glandular changes, which may become generalized, are constitu-

tional signs and symptoms that range from polyarthritis to various types of skin eruptions such as, erythema multiforme or erythema nodosum.

The course of the disease may be very prolonged or the patient may be able to overcome the infection with the aid of supportive measures in a short time. These extremes are well exemplified by two patients who were observed.

CASE REPORTS

Case 1. A white male, aged 32, unmarried, had observed an inguinal adenopathy following numerous sexual exposures. The glands continued to enlarge and become more painful until he was obliged to report to the hospital for care.

At the time of the first examination, there was no sign of penile scar. There was a bilateral inguinal adenopathy with numerous fluctuating points on the right side beneath a very tense bluish skin. Temperature 101°F. Leukocyte count 12,400. Wassermann test negative, Kahn test negative. No foci of infection or generalized disease could be held accountable for the lymphadenopathy. Frei antigen of proven value was obtained and the result of the test was a strongly positive reaction.

Under conservative treatment and strict bed rest, the suppurating glands were drained. Potassium and antimony tartrate were given intravenously biweekly in increasing dosage. The patient became very comfortable and began to gain weight. The glands decreased in size and 11 weeks after admission he was discharged as an arrested case.

Nine months later this same patient returned to the hospital with a recurrence of the same physical findings except that the glands of the left side were necrotic. The recurrence had developed following exposure and lowered resistance. The condition did not respond readily this time to symptomatic treatment. He was given a course of four diathermy treatments and was able to leave the hospital 14 weeks after admission.

Case 2. This case is described to show the association of cutaneous lesions. The patient was a white female, aged 23. This patient had been hospitalized for 28 months. There was history of gradual but continuous loss of weight associated with anorexia, headache and multiple draining fistulae in the inguinal region. There was no history of sexual exposure but the patient admitted having kept company with the opposite sex. The chest plates were negative. The Mantoux test was negative in various dilutions. An anemia was present; urine normal; Wassermann and Kahn tests negative. Loss of weight, forty poundss. Frei test positive.

On examination of this girl, in addition to the draining fistulae in the left inguinal region, there were numerous lesions of erythema nodosum extending down the anterior surface of the left leg. The patient was extremely emaciated and in spite of selected diets and insulin she had not gained weight. Biopsy of the drainage tract did not give specific information. It was decided that she should be given the possible benefit of heat treatments and a course of diathermy treatments was given. The results were gratifying. The patient began to gain weight and after several months was able to leave the hospital in excellent condition.

INCIDENCE

The incidence of lymphogranuloma inguinale has been surprisingly high where routine Frei tests have been done. In the series of 1,010 persons tested by De Wolf and Van Cleve[14] there were 58 positive reactions. Gray[15] and others in St. Louis made a study of patients in the city hospitals and found that, of 790 Frei tests on white and colored patients, the incidence of lymphogranuloma inguinale in the white race was 3.4 per cent and in the colored race 40 per cent. The factor of race susceptibility is very striking in this series. Another point emphasized by these workers was the absence of a history of previous infection in 50 per cent of the patients tested.

Goldblatt[16] found that 32 per cent of the prisoners quarantined for venereal diseases in the Cincinnati workhouse gave positive Frei tests when tested with several antigens.

PATHOLOGY

The general pathologic picture of lymphogranuloma inguinale is that of a subacute lymphadenitis. Difficulty is experienced in differentiating this condition from tuberculosis and syphilis microscopically. In certain of the cases, however, the microscopic picture is very characteristic. The disease has been diagnosed from a biopsy of the penile lesion before lymphadenopathy occurred.

When the involved glands are removed by surgical excision, there appears to be an enormous amount of peri-glandular exudate that has resulted in the matting together of the lymph nodes. If the nodes are removed early,

there is only an inflammatory congestion and a small amount of exudate. On section, the glands can be seen to have numerous individual stellate abscesses of various sizes. The necrotic material is of a whitish-gray color and is very thick.

The histologic picture, as described by Nicolas, appears to be definite one, and he believes it to be specific. There are numerous stellate abscesses with epithelioid foci and giant-cells together with numerous polymorphonuclear and round cells. The inflammation of the glandular epithelial structure is diffuse and causes the normal shape of the glands to be lost. The changes are greatest in the medullary portion of the gland. The gummas are formed of a central degenerated nucleus which is finely granular and surrounded by a wide band of epithelial cells. The leukocytes migrate through the epithelial borders of the gummas and abscesses are formed. These may assume any one of a variety of shapes, depending upon the portion of the gland involved. In their borders, typical giant-cells of large size with numerous nuclei are found. The entire glandular wall may be lost in the larger abscesses. The degenerated portion is made up of many polymorphonuclear cells and large acidophilic mononuclears. Numerous epithelial foci are found throughout the gland and parenchymal tissue that do not have giant-cells. The follicular lesions of the lymph nodes and the type of cellular exudate represent the morphologic characteristics of lymphogranuloma inguinale.

TREATMENT

The large number of suggested therapeutic aids convince one of their non-specificity. Treatments may be divided into four groups:

1. Physical
2. Surgical
3. Biologic
4. Chemotherapeutic

The physical agents employed in the treatment of lymphogranuloma inguinale are heavily filtered x-rays, diathermy, ultraviolet light, hot air, and hot baths. Of these methods, our experience has been limited to the use of diathermy and hot baths. The object is to elevate the general body temperature for periods ranging from 15 to 30 minutes daily in the hot bath, and from four to six hours of continuous temperature elevation weekly by means of diathermy. The latter treatments are given until a course of from four to eight have been completed. Our results from the use of diathermy compare favorably with those from other therapeutic agents, especially in the late cases.

Surgically, it has been suggested that the entire glandular adenopathy be removed. The contra-indication to this procedure is the possibility of subsequent lymph stasis of the lower extremity. Nichols, Barthels and Biberstein agree with Frei that partial removal of the involved glands gives good results. This is especially to be recommended in the early cases.

The histologic agents suggested include foreign protein, autohemotherapy and the intracutaneous injections of Frei antigen at regular intervals as recommended by Wein and Perlstein of Chicago.[17]

Chemotherapeutic agents generally used in the treatment of lymphogranuloma inguinale are: 1 per cent antimony and potassium tartrate given biweekly in doses beginning with 5 c.c. and increasing gradually to 10 c.c. for a period of from six to eight weeks. Potassium iodine by mouth and intravenously. The salts of copper, arsenic and mercury have been used. With the exception of antimony and potassium tartrate, the use of these drugs has been disappointing.

SUMMARY

In summarizing the effectiveness of the variously recommended therapeutic agents, it is very probable that supportive measures, as bed rest and a nourishing diet in connection with the partial extirpation of glands in the early cases, of the institution of full drainage in the late cases together with potassium and antimony tartrate offer the most effective therapeutic attack. In the late cases of esthiomene and of anorectal strictures, the results of treatment are routinely poor.

1. Lymphogranuloma inguinale is a chronic, low grade inflammation of the lymphatic nodes of venereal origin, resulting in complications of fistulae, esthiomene, or the anorectal syndrome in an estimated 50 per cent of infected persons.

2. This clinical picture has been described under a variety of titles since the middle of the 19th century. It was probably known before that time.

3. It has also been known for some time that the disease was a specific entity and was probably venereal in origin. Many confusing terms are found in the literature, including conditions with similar names without any other relationship.

4. A filterable virus is thought to be responsible for the disease. The disease has been successfully transmitted to apes, mice, rabbits and other laboratory animals.

5. In the ape, the virus appears to have a special affinity for the central nervous system tissue causing an encephalitis.

6. The disease is mainly one of adult life although occasional cases are reported in children.

7. The history of a small innocent appearing lesion on the glans penis, three to ten days after sexual relation, followed by inguinal adenitis in from 10 to 30 days, should make one suspicious of lymphogranuloma inguinale.

8. The differential diagnosis should be made from syphilis, chancroid, granuloma inguinale, tuberculosis, Hodgkin's disease, tularemia and pyogenic infections.

9. Frei antigen tests are of great value in making diagnosis.

10. Be sure the antigen is potent at the time of use.

11. Limitations of the Frei test are identical with those of other biological tests. Early cases of lymphogranuloma inguinale have a tendency to give a negative Frei and a false positive Wassermann reaction.

12. Once a Frei test becomes positive, it remains so for life providing of course that the patient's allergic status is not disturbed by infection or lowered resistance.

13. Through this test, it has been learned that many people have had this disease.

14. In the male, the inguinal adenopathy is accounted for by lymph drainage. In the female, involvement about the rectum is explained on a similar basis.

15. As the disease progresses, the infected lymph nodes mat together and become painful. Fusion with the overlying skin produces and appearance which is highly suggestive of the disease.

16. The rectal involvement may give confusing clinical pictures.

17. The course of the disease may be prolonged or the patient may be able to overcome the infection within a relatively short time.

18. Frei tests done on groups in the population in which the venereal diseases rank high often show a large number of positive tests.

19. The treatment is physical, surgical, biological, and chemotherapeutic.

20. Supportive measures, bed rest and a nourishing diet with partial extirpation (to avoid lymphastasis) of the nodes in the early cases or full drainage and potassium and antimony tartrate in the late cases of anorectal involvement are the best methods of treatment, but even then the results are routinely poor.

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DISCUSSION

Dr. E. von Haam (New Orleans): Dr. Tedder has covered the subject so thoroughly there is very little to add, but I should like to make one point concerning the value of the antigen for the Frei reaction, which is of interest.

As you know, various antigens have been recommended. While the human antigen has been used by Frei, mouse-brain antigen has been recommended in the United States by us and by Grace. Other authors have contended, however, that mouse-brain antigens, if permitted to age, give a false reaction. We have retested samples of our stock antigen which was anywhere from two months to two years old and have found that mouse-brain antigen, if kept sterile in the ice box, does not lose its specificity, although it may lose some of its sensitivity.

An important factor in making the Frei test is the choice of material used as control. We cannot use saline solution or broth for a control of a test where small molecular particles are injected into the skin. For the Frei test we inject emulsions and not solutions and therefore only emulsions of a similar molecular size as the antigen should be used for control. We have found that from 10 to 20 per cent of our patients when injected with normal mouse-brain emulsion give a slight reaction. However, the specific antigen will produce a much more severe reaction in a positive case than the control.

In connection with Dr. Tedder's remarks on therapeusis I wish to state that we have tried to treat patients with specific antigen. Our experience is not sufficient to draw any definite conclusions. But, at the present time, I believe that at least temporary improvement can be produced by intravenous injection of 0.1 c.c. of mouse-brain antigen in acute and chronic lesions.

Dr. Tedder (In conclusion): I think Dr. von Haam has successfully eliminated the objections to the use of the commercially prepared mouse brain antigens for the cutaneous test in lymphogranuloma inguinale. It is true that this test with the mouse brain antigens was objected to by most investigators when it was first introduced. When compared to the mild reaction obtained with the control test of normal mouse brain, the prompt reaction of the positive Frei test is unmistakable.

As to the use of the Frei antigen in the treatment of lymphogranuloma inguinale, I have only had experience with two cases, and in these it was not given in the acute stage, nor was it given intravenously, but subcutaneously, 0.1 c.c. doses weekly, and we were not able to detect any improvement in the patient after six or eight weeks.

SUPERIOR PULMONARY SULCUS TUMOR

REPORT OF A CASE

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and
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Ever since Pancoast[1] selected "Superior Pulmonary Sulcus Tumor" as the subject of his chairman's address to the Section on Radiology of the American Medical Association in New Orleans in 1932, there have appeared references to the subject in the literature from time to time. Considerable confusion has arisen concerning the origin of these tumors; but a clinical syndrome has been agreed upon by most reporters, consisting of pain around the shoulder and down the arm, Horner's syndrome, and atrophy of the muscles of the hand and forearm, roentgenographic evidence of an apical neoplasm, rapid rib destruction, and often vertebral infiltration. Pancoast[1] postulated origin from a vestige of the embryonical branchial apparatus and especially directed attention to careful examination of the neck region roentgenologically in cases of tumor of the apex of the thoracic cavity.

It is felt that the need has become manifest for more cases to be reported in the literature so that the whole subject may become clarified eventually.

As early as 1838, a case of this type was reported by Hare[2] from London. Interest in the subject has revived in recent years, especially since Pancoast's address, but no clear-cut evidence yet exists for a specific pathologic entity. Instead, writers[7], [8], [10] are more and more in agreement that this type of clinical syndrome can be produced by a variety of pathologic lesions, particularly tumors, and these may be of bronchial, pleural, nervous, or branchial origin, for example, or may be metastatic from some distant focus. Some writers[8] fail to see the logic of the term "superior pulmonary sulcus tumor" as used by Pancoast since no such anatomic structure as "superior pulmonary sulcus" is defined. It is objected that, at best, it is only a clinical syndrome. However, this term and

a well-defined clinical description have appeared repeatedly in recent literature, and the following case is reported for any value that it may have as an addition to the small series already reported, particularly since a rather complete study was possible in this instance.

CASE REPORT

T. G. C., a white merchant seaman, shipmaster, aged 54, was admitted to the Marine Hospital, New Orleans, on January 18, 1934, on the Tuberculosis Service, on transfer from the U. S. Marine Hospital at Galveston, Texas, with a diagnosis of: (1) tuberculosis, pulmonary, chronic, active and (2) pleurisy, fibrinous.

Two days following exposure in a hurricane in August 1933, the patient noted a deep-seated pain in the upper part of his left chest and shoulder which gradually increased in intensity and area and came to include the entire left side of the chest and neck, shoulder, arm, and hand. About three weeks following exposure, the pain became so severe that he applied for treatment at the U. S. Public Health Service Relief Station at Corpus Christi, Texas, and was admitted a week later to the Marine Hospital at Galveston. The condition gradually became worse and the patient was transferred to New Orleans on January 18, 1934, about five months after the accident. During the month prior to admission, he was troubled with drenching sweats which were limited to the trunk and upper left extremity; however, large quantities of aspirin had been ingested. There had been a progressive muscular weakness of the entire left arm since the onset of the illness. He had lost 30 pounds. No cough, no hemoptysis, and no fever had been experienced.

The patient admitted moderate drinking; admitted gonorrhea at age of 18, and syphilis in 1913, with three courses of anti-luetic therapy. The past history was otherwise irrelevant.

Physical examination revealed a well developed but poorly nourished cachectic male, apparently in considerable pain. The left pupil was contracted but both pupils reacted to light and accommodation. The teeth had been removed as an aid to treatment. The tongue was coated. The neck was apparanetly normal, with very wrinkled overlying skin; no tumor mass palpable. The thyroid was not palpable. Chest was normal in shape; ex-

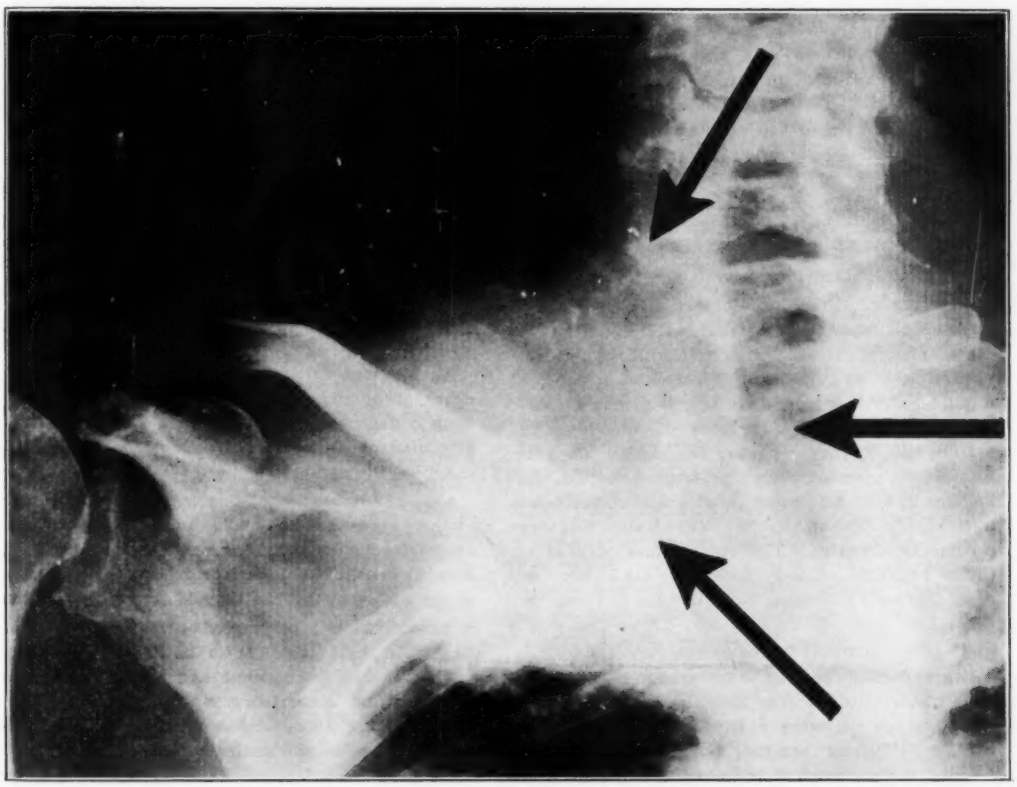

Fig. 1. Roentgenogram of tumor mass made on May 22, 1934.

pansion good and equal. Lungs were resonant throughout except for dulness to percussion over left apex posteriorly. Vocal fremitus equal on both sides and not exaggerated. Breath sounds were slightly harsh, but no rales heard. Fine friction rub at left base, not definite. The abdomen was negative except for some tenderness in the epigastrium. Genitalia and rectum negative. Left arm somewhat smaller than right; marked weakness of left arm, forearm, and hand. Left leg appeared smaller but not weaker than the right. No evidence of bone or joint disease, grossly. The reflexes were normal. Horner's syndrome present. Epitrochlear and inguinal nodes palpable.

Roentgen examinations were made over a period of seven months prior to death, at Galveston and New Orleans. September 25, 1933, at Galveston, examination revealed what appeared to be an old fibrosis of the left apex. November 4, re-examination confirmed the above lesion, and failed to reveal evidence of bone destruction or injury. January 20, 1934, at New Orleans, there was found marked density at the left apex but still no evidence of bone destruction. However, neoplasm was suspected. On January 29, the same condition without bone destruction was reported. On February 5, some bone destruction of the left first rib and left transverse process first dorsal vertebra. Pancoast's syndrome was suspected, and careful examination revealed the presence of Horner's syndrome. Roentgen rays on February 21 revealed no change in size of the neoplasm. On March 19, extensive bone destruction of transverse process of first dorsal was found; April 2, bone erosion, transverse processes of seventh cervical, first dorsal vertebrae, and head of first rib; April 9, no further advance; May 1, greater bone destruction than shown in previous film.

Laboratory: Urine was negative except for a trace of albumin and occasional casts. Sputum was repeatedly negative for tubercle bacilli. The stools were free from parasites. Sedimentation time, 43 minutes. Erythrocytes, 3,570,000; leukocytes, 9,000; small mononuclears, 20; large mononuclears, 2; eosinophils, 3; neutrophiles, 75. A few days before death, the erythrocytes were 1,460,000, leukocytes 22,150; small mononuclears 10, large mononuclears 1, neutrophils 89. The Kahn test was repeatedly negative. The spinal fluid was essentially negative. Blood chlorides, 412.5 mg. per cent. Glucose tolerance test: fasting 67.7 mg. per cent; half hour 137.0; one hour 126.0; two hours 68.0; three hours 90.0.

Course: The patient was transferred to the Medical Service. A constant afternoon fever was found, which persisted until death, at no time exceeding 38°C., and then only for a day or two. This, coupled with the early roentgen ray findings, led to the belief that he had tuberculosis. However, the presence of Horner's syndrome, unilateral sweating, shoulder and arm pain with wasting of the upper extremity, could not be explained, and consequently further studies were prosecuted.

Peripheral neuritis was considered, and the patient improved for a time under treatment for this condition, being able to get up and about the ward without opiates. Roentgen study on February 4, 1934, following a relapse, revealed bone destruction, and the treatment was changed. The clinical diagnosis was malignant tumor involving the left apex and cervical region.

A biopsy was done March 17, 1934, and the tissue diagnosed squamous cell carcinoma, primary origin undetermined, Broder's classification four, by Dr. J. A. Lanford, pathologist. A specimen submitted with history of the case and roentgen rays to Dr. Pancoast, at the University of Pennsylvania, elicited the opinion that "it may be a case of pulmonary sulcus tumor, especially in view of the destruction of the first rib and a portion of the second rib, both posteriorly, erosion of the sides of the first two thoracic vertebrae and the shadow in the left apical region. The points against the lesion being one of primary pulmonary sulcus tumor are the exact location of the pain and nodular involvement and the soft tissue bulging in the neck." He further states: "All of our cases of sulcus tumor have produced Horner's syndrome in time, and have not produced bulging in the neck, while the latter is more common in metastatic tumors and in lung tumors which have metastasized."

Later, after consultation over the slides with Dr. McFarland, Dr. Pancoast concluded that we were dealing with a true sulcus tumor, since Dr. McFarland did not think it of pulmonary origin from examination of the slides.

Meantime, a report from the National Institute of Health on our biopsy specimen stated: "Transition cell epithelioma, metastatic lymph node."

The patient failed, requiring larger and larger doses of opiates. Tumor growth was rapid, and anemia increased. He weakened rapidly and finally died on June 10, 1934, about 10 months after onset of the symptoms.

Gross Examination of Organs: A careful search of the tongue, tonsils, and the larynx fails to show any evidence of neoplasm. The trachea and the bronchi are not distorted or collapsed as a result of the new growth. The thyroid is grossly negative.

Heart: Firmly contracted on the left; somewhat flabby on the right. It is uniformly of a dark brownish color, with some hypertrophy of the left ventricle and some increase in connective tissue. On sectioning, there is increased resistance to the knife. There is practically no fat on the epicardial surface. The valves of the heart are negative for pathology.

The coronary vessels are sclerosed, but not occluded. The foramen ovale is closed. The attached portion of the aorta is relatively free from arteriosclerosis, but in the arch and to lesser degree in the thoracic aorta and to a marked degree in the abdominal aorta, arteriosclerosis is far advanced, there being many areas of calcification above the bifurcation of the iliac.

Lungs: Both lungs are somewhat voluminous. The left lung shows a neoplastic involvement in the apex as a result of infiltration. The remainder of the left lung is irregular and of an uneven consistency as a result of lobular pneumonia in various stages of development. The outer pleural surface generally presents a number of areas of adhesions. The right lung is likewise the seat of lobular pneumonia and many areas of emphysema, and in addition there is found in the apex one small secondary neoplastic nodule measuring, irregularly, 3 cm. in diameter, and on sectioning presenting the same gross appearance as the primary neoplasm in the left sulcus.

Tumor Mass: Roughly quadrilateral in shape, measuring 6 by 6 by 14 cm.; is made up of neoplastic growth infiltrating into the surrounding muscle and attached to which is the internal half of the left clavicle and the anterior two-thirds of the first and the second ribs. This growth extends above the clavicle as a fluctuating mass and has extended anteriorly onto the chest wall beneath the clavicle, and internally to the line of the esophagus, pressing upon that organ and interfering with its function; posteriorly it has extended backward and involved the sixth and seventh cervical and the first, second, and third dorsal vertebrae, the bodies of which are markedly destroyed and replaced by neoplastic growth. Beneath the clavicle the growth has incorporated the brachial plexus, and, above, the cervical plexus is partly encroached upon. The sub-clavian and the axillary arteries are completely surrounded by the new growth, and their lumens are interfered with by the infraction of this growth. The growth is generally firm. On sectioning, there is no marked resistance to the knife, the cut surface being an irregularly yellowish-pink mass with many areas of necrosis. The mass has encircled the nerves, partly infiltrated into them, and has encircled and narrowed the subclavian and the axillary arteries. The neoplastic growth is of a pinkish-ivory color relatively firm in consistency. This growth has encroached upon, if not originated in, the left sulcus of the pleural cavity, and the adjacent parietal pleura is incorporated in the growth. The adjacent portion of the lung is also encroached upon by the new growth; and upon removal of the neoplasm from the lungs, pigmented lung tissue is adherent.

On sectioning the fluctuating portion above the clavicle there is a cavity encountered which has, for the most part, a relatively smooth wall that is filled with blood. The lower portion of this cavity is made up of neoplastic growth undergoing degenerative changes with hemorrhage. This neoplasm has encroached very markedly on the mediastinal structures. On sectioning through the posterior portion of the growth there are revealed many spicules of bone from the vertebral bodies.

Spleen: Somewhat increased in size and shows fibrosis. There is in the outer border a large infarcted structure and in the lower a smaller area of infarction. These are a dirty yellowish color, quite firm in consistency and have some of the ear-marks of a possible neoplastic growth, as there is no suggestion of an inflammatory reaction. The pulp of the organ is somewhat increased in density. The connective tissue is increased and the Malpighian bodies are not demonstrable.

Liver: A dark purplish-red color, somewhat nutmeg in appearance, the central veins being definitely congested. There is some increase of the density generally of this organ. The left lobe is occupied by a number of neoplastic nodules varying in size from 3 mm. to 3 cm. On sectioning they appear as a definite mosaic within the liver substance, infiltrating and pushing the liver substance. The cut surfaces are of a dirty yellowish-gray appearance, with some areas of necrosis.

Kidneys: Both kidneys are somewhat increased in size and show a number of neoplastic nodules, which appear both in the cortex and the medullary substance. Several of these apparently began at the bifurcation of a small radicle of the renal artery. The organ generally is firm, and there is no contrast between the cortex and the medulla. There is a slight increase of connective tissue, and the blood vessels are somewhat more prominent. On peeling back the capsule there is some pulling up of the underlying substance.

Adrenals: Both adrenals are partly replaced by neoplastic growth which apparently began within the medullary substance and pushed the cortical portion in front of it. On sectioning, the neoplastic structures appear identical with those of the primary growth.

HISTOLOGICAL REPORT

Heart: Fibers hypertrophied; pyknotic changes in the nuclei; parenchymatous and fatty degeneration; fibers widely separated by edema. In some areas connective tissue is markedly increased and lime salts deposits are shown.

Lungs: Edema; congestion; lobular pneumonia. Other areas of the lungs are replaced by squamous cell carcinoma.

Peri-bronchial Lymph Nodes: Partly replaced by embryonal epithelial cells differentiating into squamous cell structures.

Spleen: Increased connective tissue; narrowing of the Malpighian corpuscles; congestion; areas of infarction.

Liver: Passive congestion; fatty degeneration; parenchymatous degeneration.

Kidneys: Arteriosclerotic changes in the blood vessels; chronic interstitial nephritis.

Adrenals: Secondary carcinoma.

Primary Growth: Masses of neoplastic cells occurring in irregular areas surrounded by a connective tissue stroma. These structures are irregular in size and outline and are made up of embryonical epithelial cells which are differentiating into keratinized structures, some forming epithelial pearls. A few of the cells are in mitosis, and intercellular bridges are noted between some of them.

ADDITIONAL HISTOLOGICAL REPORT

Primary Mass: Section of the primary tumor and its connection with the apex of the left lung shows a rather unusual differentiation of the tumor cells. Most of the older cells show an arrangement suggestive of squamous epithelia and areas of keratinization. In other areas the tumor cells are forming definite glandular acini, and some of the masses of glandular cells show striking colloidal changes. The metastases to all organs arrange themselves in glandular acini, there being but little inclination to show metaplasia and squamous cell arrangement.

ANATOMICAL DIAGNOSIS

1. Primary neoplasm in the left pulmonary sulcus and the lower portions of the cervical region, with secondary nodules in the lungs, liver, kidneys, and adrenals.
2. Brown atrophy of the heart, dilatation, chronic myocarditis.
3. Arteriosclerosis.
4. Lobular pneumonia, edema and emphysema of the lungs.
5. Chronic interstitial nephritis.
6. Secondary anemia.
7. Inanition.

COMMENT

This case fulfills the clinical criteria as generally agreed on for diagnosis of a "superior pulmonary sulcus tumor." No attempt is made to justify it pathologically, because of the wide variety of types of tumors that have been reported as causing this clinical picture. As previously stated, Hare's case in 1838 was probably the first case reported. Naturally, no histologic study was done at that time, but Hare's gross description of the lesion at autopsy fits very well.

Frost and Wolpaw[3] reported a case, in March 1936, arising from the sympathetic nerves of the neck; Jacox, in 1934[4] reported one case, a bronchiogenic, mucin-forming adenocarcinoma; Steiner and Francis[5] reported two cases in 1934, one a mucin-secreting adenocarcinoma, probably not branchial; Clarke[6], in 1934, reported one case, an epidermoid carcinoma in which origin from a bronchus or branchial pouch could not be eliminated; Fried[6], in 1932, reported two cases, one a primary carcinoma of a bronchus, the other a squamous cell epithelioma of bronchial origin; Browder and DeVeer[8], in 1935, reported two autopsied cases, both squamous cell carcinoma, arising in the right upper lobe. Graef and Steinberg[9] in September 1936, reported a limited autopsy on a case with this clinical syndrome, which revealed a pleomorphic epithelial tumor with a thin, plaque-like extension to the visceral pleura and metastasis to the kidney. They were unable to rule out branchial origin, because the autopsy did not include the neck.

The case herewith reported includes a gross study of these neck organs. In the cases reported in the literature there appears to have been no strenuous effort made to find a source of the tumor in the neck organs derived from the branchial clefts and pouches.

SUMMARY

1. A case clinically conforming to the characteristics of the syndrome commonly known as Pancoast's syndrome is reported, in which autopsy revealed a large, infiltrating, rapidly growing new growth in the apex of the left thoracic cavity, involving the lung, pleurae, ribs, vertebrae, vessels, nerves and lymph structures in this region.

2. No branchial source was discovered on careful examination of the neck region.

SUPPLEMENT

The following case was observed by us after the above was written. We wish to add the following:

The patient was admitted December 29, 1936, diagnosed somewhere else as tuberculosis, pulmonary, chronic. Roentgen ray study of the chest made the following day suggested a tumor of the superior sulcus and it was re-

quested to examine patient for the clinical signs of Horner's syndrome. These were present and the diagnosis was changed accordingly. The patient was transferred to the Hines General Hospital on January 14, 1937, where he died on the 20th of the following month. An extensive and careful autopsy done at the latter hospital confirmed our diagnosis: Carcinoma, bronchiogenic, right apex (superior pulmonary sulcus, Pancoast type).

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LUNG ABSCESS

REPORT OF A CASE IN A CHILD*

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Lung abscess is a localized suppurative process terminating in cavitation. The pulmonary lesion begins as an area of suppurative pneumonitis which resolves or which may undergo necrosis, liquefaction and cavity formation. Surrounding the cavity is an area of infiltration which contains the infecting organism which may continue to excavate, thus resulting in the formation of an enlarging abscess or of multiple abscesses.

Several factors contribute to the development of lung abscesses. As a postoperative complication it occurs more frequently than from any other cause. In a combined series of 2548 cases reported in the world literature 657, or 26 per cent, followed some type of operation and 360 or 54.8 per cent of these followed tonsillectomy.

Wessler and Hedbloom in their series found that 28 per cent and 21 per cent respectively followed tonsillectomy. Lord reports an even higher figure of 34 per cent.

Much interest has been shown in recent years as to whether abscesses following tonsillectomy are due to blood stream infections or from aspiration of infected material. Cutler and his associates found it impossible to produce abscess in dogs by instilling infected material into the bronchial tract but were able to produce abscess readily by introducing infected material into the jugular or femoral veins. They often found emboli infected in veins in the tonsillar fossae in patients following tonsillectomy. They pointed out the action of the pharyngeal muscles as favoring the dislodgment of such infected thrombi in the venous circulation. Yet on the other side of the question a number of investigators as Smith, Allen and Joannides have been able to produce abscesses experimentally in animals, including the dog, under conditions that closely simulate clinical conditions. Besides these experiments the clinical evidence is very striking. Bronchitis is the most frequent postoperative pulmonary complication and it has been shown by Smith and Robinson that infection in the bronchus may pass through the damaged mucosa into the pulmonary tissue by way of the lymphatics and also by the fact that most postoperative pulmonary abscesses follow operations under general anesthesia during which the protective pharyngeal reflex is obliterated in whole or in part. Pneumonia is also apparently a frequent cause of pulmonary abscess. In Lord's series of 227 cases the etiologic agent was definite in 76 or 33.4 per cent. In 59 cases, collected by Smith and McBride, pneumonia was the causative factor in 22. Hedbloom expresses the opinion that the impression that pneumonia in its various forms is a frequent cause of abscess is probably due in part to the fact that pneumonia is of such frequent incidence and in part

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to the fact that in many cases the first clinical manifestations of the disease are those of a pneumonia or pneumonitis.

Aspiration of foreign bodies is also a frequent cause of pulmonary abscess in children. In two reported series approximately 10 per cent of the lung abscesses are noted as giving a positive history of aspiration of a foreign body. The great majority of solitary lung abscesses localize in a relatively small area, comprising the apex of the lower lobe posteriorly and the posterior tongue of the upper lobe. At some point they are nearly always close to the surface in a region between the third and seventh rib posterior to the scapular line. The distribution in a group of 238 cases reported by Freelander occurring at the Cleveland City Hospital was as follows:

Right upper lobe, 59 or 24.7 per cent; right lower lobe, 63 or 26.4 per cent; right middle lobe, 21 or 8.8 per cent; left upper lobe, 20 or 8.4 per cent; left lower lobe, 55 or 23.1 per cent; multilobular, 20 or 8.4 per cent.

The organisms most frequently present in lung abscesses are streptococcus, pneumococcus, Pfeiffer's bacillus, staphylococcus, Vincent's organism and fungoid organisms, the spirochetes and fusiform bacilli of the mouth.

SYMPTOMATOLOGY

As a result of the inability of infants and young children to expectorate the sputum which is frequently of diagnostic importance, the diagnosis is more difficult than in adults. Frequently the history of a recent operative procedure or the possible aspiration of a foreign body followed by expectoration of a varying amount of foul and discolored sputum may suggest a diagnosis. In postpneumonic abscess the process, instead of resolving, persists, as well as cough, while the sputum becomes purulent. Even in the cases where the sputum is swallowed the odor of the breath is significant. Wessler and Schwartz are of the opinion that postpneumonic abscesses may be divided into two classes; one in which the pneumonia runs its typical course until about the thirteenth day when the classical signs of abscess present themselves, and the other in which the pneumonia persists instead of resolving and ultimately changes to a chronic, indurative type with multiple bronchiectatic cavities. As a rule the disease in acute cases commences with a sudden onset of fever, malaise and frequently chills. Cough develops early, at first dry, often paroxysmal and exhausting and distressing. At first dry, it gradually becomes looser and small quantities of muco-purulent sputum appear to become purulent and increased in quantity as the abscess makes communication with a bronchus. This increased expectoration as a rule continues for some days and then gradually falls to a lower level at which it remains about constant. At times it will cease for a while to be brought up again suddenly in large quantities due to a temporary occlusion. Th odor of the sputum is usually offensive from the time it becomes purulent. Fever is usually present and is increased with retention of sputum. Hemoptysis is common and at times may be severe. Clubbing of the fingers and the toes when the history is of short duration is suggestive of abscess. There are no physical signs that are characteristic. Impairment of percussion note is constant, frequently with some flattening of the affected side. Most commonly the signs are those of consolidation and occasionally of cavitation. If an abscess is present the signs vary as the cavity fills and empties. Leukocytosis is usually present. In the earlier stages of the disease, failure to see a pulmonary cavity on roentgen examination is frequent, as the area of suppuration may not as yet have undergone excavation. In infants, because of the early extension of the process to the pleura with the development of an empyema, the primary condition is most likely overlooked. The most common complication is an empyema or if a broncho-pleural fistula as in the case to be reported, a pyopneumothorax.

DIAGNOSIS

Diagnosis of pulmonary abscess in children is more difficult than in the adult. The clinical picture is frequently absent or not as marked as usually seen in the adult, and we must depend upon the history, the few physical signs that may be present, pyrexia and cough to arrive at a definite conclusion. Roentgen rays are useful in confirming these signs but their main purpose must be to locate the position of

the abscess and assist in its classification. Conditions most likely to be mistaken for pulmonary abscess are tuberculosis, bronchiectasis, suppuration due to aspiration of foreign bodies and interlobar empyema.

TREATMENT

As regards the treatment of pulmonary abscess our first aim should be that of prevention. This may be accomplished by proper anesthesia, position of the patient and removal of secretions to prevent aspiration into the airways. In addition, in known cases of aspiration of materials into the air passages, bronchoscopic removal should be carried out immediately. Crowe and Scarff state that no pulmonary abscess complicated 3500 consecutive tonsillectomies at Johns Hopkins Hospital, due to careful operative technic including the Trendelenberg position. Once the condition has developed the conservative treatment should be adopted as long as improvement is progressive. According to Wessler and Schwartz one third of the pulmonary abscesses in children are cured by conservative measures within two months. These measures consist of rest in bed, an abundance of fluids by mouth, supplemented if necessary by proctoclysis and hypodermoclysis, a high caloric diet and transfusion of blood if indicated. Sedatives and opiates may be used for cough and pain. However, they must be used with caution as they may interfere with drainage. Creosote inhalations may be used and at times successfully in relieving cough. In those cases of Vincent's infection, intravenous injection of arsenic is most beneficial. Postural drainage is also a valuable measure in the conservative management of abscess. Its use is to be governed by its effectiveness in producing evacuation of secretions and by the ability of the patient to tolerate it. The sputum obtained should be measured if possible during each treatment. A careful study of the location of the abscess must be made to obtain the correct posture for the most adequate drainage in each individual case. Bronchoscopy should also be considered in localizing the bronchus from which the pus exudates as well as to encourage drainage by removing any inspisated pus and by increasing the size of the opening to allow better drainage.

CASE REPORT

D. G., a white female, aged 9 years, was admitted to the hospital with the following history:

After several attacks of "colds" during November and early part of December, the child on returning from school on the evening of December 17 was febrile, complained of pain in right side accompanied by a dry cough. On the following day she was brought to the family physician's office, and after an examination a diagnosis of pleurisy was made and mother advised to return home immediately, to put the child to bed, and to administer medication and nursing care as ordered. After a night of apparent comfort, the child was again seized with a violent pain in same location, attended with some difficulty in breathing. A diagnosis of pneumonia was then made, counter-irritants in the form of mustard and flaxseed poultices were ordered, with the usual routine treatment. The temperature was remitting in type from a minimum low of 100 to a maximum high of 104. Pain continued to be marked, with occasional relief by the use of codeine and aspirin. These symptoms continued until January 3, when the patient became afebrile and the pain ceased. This favorable improvement continued until January 7 when temperature and difficulty of breathing again manifested themselves and continued until admission to Mercy Hospital on the evening of January 10.

Examination on admission revealed an emaciated child, marked pallor, and physical evidence of a recent severe illness. On physical examination there was complete absence of breath sounds over whole right lung, with marked dulness on percussion. Lack of tactile fremitus and diminished motion of right chest were observed. Moderate amount of pain and tenderness were present on palpation in right lower quadrant of abdomen. Diagnosis of empyema was made, which was corroborated by the roentgenogram with the additional information that a pneumothorax was also present. The presence of air in the pleural cavity was thought at the time to be due probably to a ruptured vesicle. Thoracotomy was done the following morning when about 150 c.c. of a most foul odored material was removed and drainage instituted by the use of catheter left in situ. With daily aspiration there was a gradual daily improvement both in the physical signs and general condition of patient, relief of respiratory distress, steady decline in temperature and an increased comfort to the child. This steady improvement continued until February 1, when the temperature again began to climb assuming a septic character, the patient again became listless, anorexic, restless with a true toxic appearance. A roentgenogram taken on February 2, 1937, showed an increased density of the lower half of right chest probably due to

fluid in pleural cavity, plus thickened pleura. The left lung was normal. Blood count then showed a total count of 24,400 white cells with 89 per cent neutrophils. This condition continued until the afternoon of the 14th when the child while sleeping suddenly developed a continuous, distressing, exhaustive cough which lasted for about two hours, accompanied with a cold clammy sweat, pinched features and rapid and feeble pulse and cyanosis. On auscultation subcrepitant rales were heard over the whole lung. Opiates to control the cough and oxygen for the dyspnea and cyanosis, together with stimulants, were administered. I was strongly then of the opinion that contrary to the roentgen ray findings we were dealing with a ruptured abscess into a bronchus especially when the child, after the shock, began expectorating again sputum of foul odor, although a roentgen ray taken the day previous disclosed an increase of density over lower two-thirds of right chest most likely due to a thickened pleura with a partial atelectasis of middle and lower lobes. Left lung normal. Another taken February 15 showed the upper two-thirds of right lung now aerated. There was a large rounded area of increased density in the lower lobe most likely due to lung abscess. Left lung normal. At this time physical examination by auscultation revealed numerous moist rales over whole lung with normal percussion note except at the base. The temperature, dropped to an average normal and the general condition of the child showed again an improvement. Roentgenogram taken on February 18 was reported as follows: Pneumothorax of right chest with collapse of the middle and a portion of the lower lobe. There is a broad band of increased density extending from the diaphragm to the upper lobe due either to a thickened pleura or collapsed lung. The rounded portion of increased density seen at the base in radiograph of the 15th is now replaced by an area of decreased density probably due to evacuation of the abscess cavity. The condition appeared improved. Examination of sputum showed the presence of streptococci, staphylococci, pneumococci. Blood examination: total white 23,100 with neutrophil count of 87 per cent. Roentgenogram of February 24 disclosed multiple lung abscesses lower lobe of right lung with apparently good drainage throughout bronchi. Pneumothorax of right chest with about 50 per cent of lung expansion. Left lung normal except for moderate increased markings at the base. Condition improved.

With this apparent improvement both in the physical signs and roentgen rays, with a temperature normal, the weakened physical condition of the child did not revive, her resistance did not improve, the pulse was continuously rapid, weak and feeble. Cyanotic attacks occurred frequently, necessitating the almost continuous use of oxygen and the child expired during sleep on the night of February 27.

AUTOPSY PROTOCOL

Autopsy held on the body of D. G. at Mercy Hospital on February 27, 1937, at 5:30 a. m. by Drs. G. H. Hauser, D. G. Graham and L. A. Morrogh.

Body: The body is that of an emaciated female child, body length 4 feet, aged 9 years. Lividity is present on the back. The pupils are equal and regular and measure 2.5 mm. in diameter. The skin is very pale.

Peritoneal Cavity: The parietal and visceral peritoneum is smooth, moist and glistening. The omentum is spread over the intestines. The mesenteric lymph nodes are not enlarged. About 200 c.c. of clear, serous fluid is contained in the pelvic cavity.

Pleural Cavities: The left hemithorax contains about 100 c.c. of serosanguinous fluid, and a fibrinous exudate covers the lower portion. In the right pleural cavity is found an area about 13 inches in diameter, located at the lateral aspect of the lower lobe, which is entirely surrounded by dense fibrous adhesions that extend from visceral to parietal pleurae. The cavity so formed contains thick, yellow, foul-smelling, purulent fluid and communicates by an opening 1 cm. in diameter with a cavity in the lung.

Pericardial Cavity: The pericardial cavity contains about 35 c.c. of clear, greenish, watery fluid. Visceral and parietal pericardium is smooth, moist, glistening and free of adhesions.

Heart: The heart is of normal size and a pale brown color. The epicardium is smooth, moist and glistening. On section the myocardium is a mottled light brown color, and on pressure shows some friable areas. The endocardium is smooth and glistening and the valves show nothing of note.

Lungs: The left lung is crepitant in the upper lobe, but very firm in the lower.Several small discrete nodules are visible at the anterior border of the bases of both lobes. On section the lower lobe is found to be completely consolidated, yellowish-grey in color and thick, yellow, purulent fluid oozes from the cut bronchi. Considerable fibrous tissue is present throughout the entire lower lobe. The right lung is smaller than normal, but partially consolidated in lower lobe. On section two small abscesses about 1.5 cm. in diameter are found just beneath the surface at the anterior border of the upper lobe; a large abscess cavity is present in the lower lobe in the mid-axillary line about 3 cm. from the lung base. This cavity measures about 5x4x4 cm., is of irregular shape, and communicates laterally with

the empyema described above, through an opening 1 cm. in diameter. The cavity proper is partially divided into two portions by a thin partition, and contains thick, foul-smelling yellow pus and necrotic tissue. A zone of induration surrounds the abscess cavity.

Liver: The liver is firm in consistency, brown in color, mottled on its superior surface with irregular areas of a paler, almost yellow color. On section the parenchyma is yellowish-brown instead of the usual mahogany. A small area of the right lobe is of friable consistency, the balance of the organ firmer than normal. The gall-bladder contains dark-green bile and no stones are present.

Pancreas: The pancreas shows nothing of note.

Spleen: The spleen is of normal size, of deep slate color and of firm consistency. On section the pulp is dark purple, and scrapes easily.

Gastrointestinal Tract: The gastrointestinal tract shows nothing of note.

Kidneys: Both kidneys are redder than normal, the capsules strip easily. Cortex, medulla and pyramids are well demarcated. Slight hemorrhage is noted in the walls of the pelves.

Bladder and Genital Organs: This portion of the genito-urinary tract shows no pathology.

Aorta: The intima is smooth, pink and glistening and no areas of dilatation are present.

Brain: The brain was not examined.

ANATOMICAL DIAGNOSIS:

Bilateral bronchopneumonia; multiple abscesses of right lung; encapsulated empyema (right side); pleural effusion (left side); toxic myocarditis; toxic nephritis; fatty degeneration of liver.

CONCLUSIONS

Reviewing the clinical symptoms, physical findings and roentgenograms with an autopsy report and history of the case we can arrive at the following conclusions:

1. The original illness began with a pleurisy and pneumonia which was followed by empyema.

2. That the child was well on the road to recovery from these two conditions when the pulmonary abscesses began to form which was some twenty days after admission.

3. That the abscesses ruptured both into the pleural cavity as was shown at autopsy by the circumscribed empyema, and into a bronchus as the foul expectoration indicated.

4. That this latter condition with its free drainage would have shown favorable results.

5. That death was ultimately caused by the multiple abscesses, small but generalized in both lungs together with the pneumonia in left lung which three days before death was negative in the roentgen ray report.

6. That with such complex pathology in a lung we cannot depend too much on roentgen rays but must rely more on clinical symptoms, history of the case, and progress of the illness in arriving at a correct diagnosis.

MACRODACTYLISM

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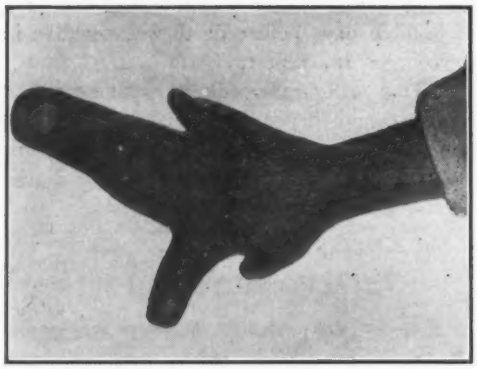
It is said Virchow proposed to call local hypertrophies which are now and then met with, where a foot, hand, finger or toe are involved, "partial acromegaly." Certainly, this must seem erroneous as it may be misleading inasmuch as it should not be confounded with a disease as distinct as acromegaly. These enlargements either of toe, finger or extremity exist at birth, increasing in size more markedly at puberty and as a rule not accompanied by a general bony enlargement. They are of interest in that the condition shows no constitutional evidence of other tissue changes except a possible like condition of some other individual digit.

Macrodactylism may be both congenital or acquired and measurably speaks for a trophic effect that is local and distinct in its cause. Congenital hypertrophy fairly conveys the nature of the enlarged member, which fetal life possibilities make likely and a disturbed local nutrition favors. A portion only of a finger involved favors such a view. Whilst the hypertrophy is manifest at birth, it is said that in some instances this was not apparent. It is progressive and a high degree of hypertrophy may be evidenced in children of immature years, as in the instance from which the accompanying photograph was taken of a child of seven years.

The cause can be attributed, apparently, to some idiopathy of development, the true nature of which seems to be unknown. It has been attributed to elephantiasis, but in this instance lymph obstruction by the filaria makes the difference a genuine one. Heredity seems to play no disposing part in its occurrence.



Appearance of hand before operation, showing the very marked macrodactylism.

The varying condition of the essential tissues of the member speak for a disturbed nutritive process impaired by an unknown cause.

Usefulness of the member is often interfered with by its size. The affected fingers have sometimes a like condition of the metacarpal portions involved in the hypertrophy. The enlargement involves both length and thickness. Of course, the overgrowth may be gigantic and from this results a useless member. It is stated, that in one instance, the hand weighed twelve pounds. The right hand middle and index fingers seem more frequently affected; in truth, the three radial digits being most commonly involved.

The treatment of this condition in its incipiency, would be the ligation of tributary arteries purposed to a diminution in supply of nutriment; unfortunately, this has not proved of avail. It is said that compression, too, offers little hope of results. Amputation is the measure more frequentiy required both to improve the usefulness and appearance of the hand, and it is said to prevent an extension of the hypertrophic process which is possible both to the parts remaining and as well the limb.

The accompanying photograph was taken from a case in which I amputated the enlarged member.

LOCAL USE OF QUININE IN OPHTHALMOLOGY*

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Quinine, an alkaloid derived from the bark of the cinchona tree, has at various intervals been in the limelight as a therapeutic agent for various and sundry disorders, from malaria to trachoma. Of late this drug has been brought forward once more, and this time through the channels of ocular therapeutics, and to date has made fair progress towards becoming one of the members of that group of drugs used locally in connection with ocular disease. Work on and with this drug is still in its experimental stage and it is in this connection that this paper is written, to record how it has been used by me and what results were obtained with its use.

Besides being an antipyretic and mild analgesic, quinine is an alkaloid that is both an astringent, bactericide, and a protoplasmic poison. The drug has in both past and recent experiments been shown to have the power of destroying leukocytes and lymphocytes, and that this effect on lymphocytes is most marked. Quinine, according to Cushny, acts on the nutrition of almost all forms of protoplasm bringing about, first, an increase in tissue activity, later depressing this activity below normal, and finally causing its death. Selinger showed in his work with the drug on trachomatous patients that a two to four per cent ointment or a solution up to ten per cent could be used locally in the eye without visible harm to the conjunctiva, cornea, or any of the ocular adnexa. He also showed, along with other investigators, that the alkaloid possessed a remarkable penetrating power when applied locally to mucous or lymphoid tissues. Their combined experiments have shown that the drug

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when applied locally to such tissues has no cumulative effect and in this respect toxic amblyopia and tinnitus do not occur.

As a protoplasmic poison, quinine while not harmful to the conjunctiva, cornea and ocular adnexa when used locally, by its action as such a poison inhibits the infiltration of the foregoing tissues by leukocytes, lymphocytes, and to a great extent by fibroblastic tissue. The latter has even been seen to become diminished in density when subjected to quinine therapy. This paper nor any of the foregoing papers intend to imply the idea that total abolition of any connective tissue present is possible with the use of quinine, nor do I intend to convey the idea that the drug will prevent the formation of all fibroblastic tissue, as at the present writing such a fact is believed impossible, but I do wish to bring out the belief that corneal opacities of various types can become partially cleared with its use, and that in all probability its use following ocular trauma in certain cases will inhibit excessive fibroblastic tissue formation and that its use here has a good rationale. That the quinine has an effect on the accumulation of lymphocytes and other abnormal cellular elements in the corneal stroma can be seen from the fact that the opacities are observed to change in density and that some of the older infiltrates disappear entirely only to return in milder form after therapy has been discontinued. One knows that once a corneal infiltration has developed it progressively becomes denser and so remains until finally absorbed. Such rapid changes in the character of infiltrates over a period of a few days can only be ascribed to the action of the alkaloid on the cellular elements composing the infiltration.

As stated by Selinger, "What the bactericidal action of quinine is on *Treponema pallida* in the corneal tissue cannot be stated at this time" but in a series of ten cases of interstitial keratitis, five of whom were receiving only the arsenicals and mercury, and the remainder quinine ointment of two per cent along with the routine antisyphilitic treatment at Charity Hospital in New Orleans, I can state that of these latter five cases, four cleared in one month while the other group not getting quinine locally only three cleared, and then after three months, while the other two are still under treatment and have at this writing been placed on four per cent quinine bisulphate ointment and have begun to show signs, however slight, of clearing. Such cases alone would tend to show the action of the drug in cooperation with and without other well-known syphilitic remedies, as well as its powerful penetrating and protoplasmic poison activities in breaking syphilitic infiltration of the stroma.

Old corneal opacities resulting from trauma and sclerosing keratitis have been treated with two to four per cent quinine ointment and with a two per cent solution where treatment with ethylmorphine hydrochloride had failed. In the one case of sclerosing keratitis treated, both eyes had been treated with ethylmorphine hydrochloride to no avail. The left eye in this case was subjected to two per cent quinine bisulphate ointment twice daily and two per cent quinine bisulphate solutions as drops four times daily. Under such treatment visual acuity has returned from light perception to hand movements and the ability to distinguish form within three months. Whereas the eye treated with dionin, both in liquid and powder form, became very painful and congested following each treatment, the eye treated with quinine was painful only during the first two applications and from then on has caused no discomfort. Such a slight anesthesia induced by quinine is beneficial both physiologically and psychologically, and undoubtedly accounts for improvement seen in this case as well as the improvement seen in cases of interstitial keratitis; the physiologic action here is one of the absence of pain that would cause a dilation of the vessels thereby increasing the amount of cellular elements escaping from the vessels; the psychological element in play here is one having to do with fear and in particular the fear of the use of a drug causing pain such as dionin.

Quinine therapy in cases of corneal ulceration bears out the fact that the drug exerts an inhibitory power on abnormal hemic and tissue formation resulting in scars and infiltrations. Of six patients seen with corneal ulceration, quinine in two per cent ointment was used in four cases. In one of these a recent

extensive ulceration centrally located and with hypopyon, both of two weeks standing and with a visual acuity of 0.3, quinine bisulphate ointment was used twice daily. In five days desquamation of the ulcerated area set in and in eight days the margins were rounded off and the epithelium could be seen to have advanced out over the edges. Treatment was continued, and the area was covered with new epithelium within a period of three weeks with only a minimal amount of scar tissue present, although the stroma had been heavily involved. Visual acuity moved up from 0.3 to 0.7. The remaining three cases reacted similarly but to a milder degree. The latter cases were of long standing and had been cauterized with iodine previously.

It is probable that these cases would have cleared up to a certain extent under other forms of therapy, or even spontaneously, but the rapid improvement with such little discomfort under quinine therapy is worthy of mention.

Gradle, Lenzen and Selinger have used ten per cent quinine bisulphate solutions locally to the lids of trachomatous patients and have found a most gratifying improvement in the form of a decrease in the hyperemia and papillary and follicular hypertrophy after several weeks' use. They further state that in from four to six months most of their patients showed little evidence of papillary hypertrophy. In this connection I have used four per cent quinine bisulphate ointment in the treatment of papillary conjunctivitis and in all ten of the cases treated, hypertrophy ceased in four weeks, and in five weeks the condition had cleared up. One case of vernal catarrh also was treated with four per cent ointment together with an improvement of the patient's general hygienic surroundings and a well balanced diet. This case cleared within a month. It may be stated here that the case just mentioned had visited the clinic for the past two years and had been treated with zinc sulphate, dionin and had been referred to the allergy clinic without relief.

During the past six months I have used quinine in solutions and ointments in the treatment of cartarrhal conjunctivitis and have found its results most gratifying. In fifteen cases so treated, the conjunctival infection decreased by one-half within two days, on the average. Exudates from such eyes examined microscopically after one week were found to be sterile. The average case cleared up in seven to ten days, and it may be stated that these were those occurring during the recent influenza outbreak in New Orleans. Most of the patients complained of the use of an ointment, so a solution of two per cent quinine bisulphate was used instead. In such cases the disease process was longer in being brought under control.

One patient with phlyctenular kerato-conjunctivitis was treated with both the two per cent ointment and the two per cent quinine bisulphate solution together with proper dietetics and hygiene. The eyes cleared without the trace of a scar. In all probability the condition would have cleared with proper diet and hygiene, but the absence of scars and the end of the process in one week is indeed gratifying and worthy of mention.

In connection with the McReynolds operation for the removal of a pterygium, I have employed the use of a two per cent quinine bisulphate ointment along with the use of atropine as a post-operative treatment in ten cases, and have found that scarring from such an operative procedure has apparently been greatly reduced when compared with the records of patients in whom such treatment had not been used. However, it may be said that such action may have taken place without the use of this drug but since its use was instituted, record of such results must be made here.

Similar results were observed in a number of post-operative cataract cases in which the intra-capsular method with a corneal suture was employed.

In cases treated and studied, a two per cent to four per cent ointment or a two per cent solution or both of quinine bisulphate was used. The bisulphate was selected for it is second in water solubility of the quinine group, and being less acid than most other quinine salts is also less irritating to the eye.

It should be remembered that quinine is incompatible with copper, lead, zinc, iodides, bromides, their compounds, tannic acid, alkalis,

ammonia and lime water. Supposedly incompatible to mercury, no such effects have been seen. Quinine acts synergistically with arsenic, iron and mineral acids.

Ethyl-hydroxycupreine (optochine; nemochin) is one of a number of alkaloids derived from the bark of the cinchona tree (Peruvian bark) that resembles quinine, but is endowed with less of the desired activity and with more of the undesired side effects (convulsant, Albertoni, 1882). This drug is one of a number of quinine alkaloids formed chemically as follows: Quinine is built of two rings, (1) quinoline; and (2) a piperidine derivative quinonuclidine; the quinoline ring bears a methoxyl group and the second ring a vinyl group; the replacement of these by other alkyl groups forms the derivatives and in this particular instance forms the type $HO.C_9H_5N.CHOH.C_7H_13N.CH_2CH_3$ known as hydrocupreine. The alkyl derivatives of hydrocupreine were found by Morgenroth to possess a high bactericidal efficiency, even in the presence of protein, and at the same time a relatively low toxicity to tissue cells. They were therefore proposed as tissue-antiseptics, both for local and systemic application. Experiments have shown that these derivatives tend to concentrate at the surface of solutions to such a degree as to form rather rigid films (Ramsden; Bayliss). Such films interfere with the condensation of other substances at the surface and therefore hinder catalytic processes, inorganic as well as organic. This results in decreased metabolism, and there is a tendency to precipitate proteins. Surface action is also shown by the arrest of Brownian movement. Such drugs seem therefore to produce anaphylactoid phenomena. The quinine film presumably diminishes the permeability of the cell leading to a narcotic effect such as seen on local application to nerves, muscles, and serous membranous tissues. Toxicity of this drug is relatively low probably due to the fact that it is largely bound and deposited in insoluble and harmless form.

Ethylhydrocupreine-optochine is especially toxic to pneumococci (Morgenroth and Halberstaedter). In vitro, the drug inhibits the growth of pneumococci with a concentration 1:800,000 in serum; it kills them with 1:400,000 (Wright 1912). Coehn, Kolmer and Heist in 1917 showed blood serum reduces the drug's bactericidal power in serum from one-fifth to one-tenth. Morgenroth in 1918 showed that the drug was more active in the whole blood rather than when the serum is separated and showed the cause of such action was due to the fact that the corpuscles take up a higher percentage of the drug. All strains of pneumococci and also streptococci are inhibited by concentrations of 1:100,000 yet some require concentrations of 1:10,000-5,000. Nachmann in 1915 and H. F. Moore in 1915 in different laboratories proved conclusively that optochine greatly increases the efficiency of anti-pneumoccus serum.

Morgenroth and Ginsberg in 1912 and 1913 proved that subsequent to the drug's first instillation into the conjunctiva a local analgesia persists for one-half hour and longer.

Bedell in 1920 showed optochine to be useful as an antiseptic, irritant and anesthetic in conjunctivitis of varied types and of high value in ulcus serpens cornea.

Optochine was introduced into my ophthalmic service at Charity Hospital one year ago. On its first trial the drug was used with caution in solutions of one-half to one per cent and only in cases of pneumococcal conjunctivitis that had been proved such with the microscopie. During the past year some seventy-five to one hundred patients with this form of conjunctivitis were treated and in less than three per cent of these cases the drug did not halt the condition. Such cases were taken under careful questioning and it was learned that treatment had not been fully carried out at home, or that a secondary infection had developed.

Ten cases of hordeola, after removal of the dead hair and evacuation of the exudate, were placed on one-half per cent optochine to be used thrice daily and in no case was there any sign of conjunctivitis seen at any time.

Acute catarrhal conjunctivitis and acute pneumococcal conjunctivitis seen so frequently in the out-patient clinic and wards during the recent local influenza epidemic were perhaps the two outstanding conditions subjected to optochine treatment in one-half to one per cent

solutions. In eighty-five per cent of such cases the condition cleared under this treatment above; in the remaining fifteen per cent hot compresses, ammoniated mercury of three per cent and weak zinc sulphate solutions were used as supplementary treatment. However, all cleared eventually.

I have been extremely fortunate in having the opportunity of treating three serpent ulcers of the cornea with this drug. In two of these cases two per cent optochine was the only antiseptic drug used. Both cleared with its use in conjunction with the use of hot compresses and atropine. The third case is still under treatment. Though cauterized with the actual cautery little progress seemed to have been gained so the local use of optochine one per cent and quinine bisulphate ointment two per cent was instituted with the result that the ulcerated area has almost healed and with a minimal amount of scar tissue. At the present rate of healing the patient will leave the hospital within two weeks, having been hospitalized by that time a total of four weeks. Smears from this eye show no sign of any micro-organism present.

The drug has been used in the treatment of disciform keratitis in five cases. In only one of these has it proved of definite value in treating such cases now believed to be caused by a peculiar type of pneumococcus that can and does survive only in the deeper layers of the corneal stroma. In combining quinine bisulphate ointment of two per cent with optochine two per cent, the other cases showed a halting of the pathologic process but neither clearing nor eradication of the disease ever took place.

I have attended one case of abscess of the conjunctiva of five days' standing. The abscess was brought to a head with hot compresses, then incised, then drainage established. A two per cent solution of optochine was used every four hours. The process cleared and at no time was the conjunctiva further affected.

Having seen the real antiseptic properties as well as the analgesic properties of optochine in clinic and wards, its use was instituted as a routine post-operative procedure in the dressing of all eyes having been surgically traumatized. In 150 cases so used post-operative complications developed in ten cases. Seven of these latter were negro patients, two were oyster fishermen living in the low marsh-lands and one was a young child. It would seem from these statistics that ignorance of their condition and their natural lack of cleanliness apparently accounts for the complications that developed, for in all cases improper use of the drug was in evidence.

In the cases studied and treated a solution of one-half to two per cent of optochine was used. As a general ocular antiseptic and analgesic, optochine one-half per cent is of definite value in ocular conditions in that it has an almost specific action on all types of the commoner pneumococci, and to a less extent on such organisms as streptococci and staphylococci as well as some definite effect on other organisms such as influenza bacillus, the Koch-Weeks bacillus and some effect on the filtrable viruses causing catarrhal conjunctivitis as seen in epidemics. I have found its use most helpful as a drug to use on post-operative cases. I believe it to be of value in preventing conjunctival infections.

It should be remembered that strong solutions of the drug can cause ocular disorders, hence only such solutions as mentioned should be used and in this connection I can well state that a solution not exceeding one per cent can be used over exceedingly long periods of time without causing injury. Supposedly incompatible with such drugs as mercury and iodides, no such reactions have been observed in any of the cases studied and I sincerely doubt that such an incompatibility exists for there have been no such cases reported and since it is hardly more than absorbed there is ample room to dispell fear of injury from incompatibility. The fact that it acts synergistically with quinine should be well borne in mind.

SUMMARY AND CONCLUSION

Locally, quinine has been shown to be an astringent, a bactericide and an anesthetic to mucous membranes. It is a definite protoplasmic poison that, when applied locally, possesses the power of deep penetration of the tissues and will destroy leukocytes, lymphocytes

and other cellular elements and has the power of inhibiting scar tissue formation. Quinine bisulphate has been shown to be of value in the treatment of interstitial keratitis, trachoma and of both old and recent corneal opacities. It has been used in cases of vernal catarrh, phlyctenular kerato-conjunctivitis and corneal ulceration of several types beneficially.

Ethyl-hydroxycupreine (optochine) is one of a number of alkaloids formed from the replacement of one of the two chemical rings composing quinine by an alkyl group. It resembles quinine in its reactions but is less active. As a protoplasmic poison it is weaker than quinine. It is known to possess a high bactericidal efficiency even in the presence of protein, yet a relatively low toxicity to tissue cells. Its action seems to be that of a tissue antiseptic and bactericide due to the fact that it concentrates on the surface in solution to such an extent that a rigid film is formed and such a film interfering with the condensation of other substances at the surface hinders catalytic processes, both organic and inorganic, resulting in a decreased metabolism and causing a precipitation of proteins. The film further diminishes cell permeability leading to a narcotic effect as seen on local application to nerve, muscle and serous membrances. It is especially toxic, almost specifically so to all types of pneumococci and also to streptococci and staphylococci. As a general ocular antiseptic and analgesic it is of a very definite value in the clinic, ward and as a postoperative preparation to be used in combatting the invasion of the eye or the wound with an infectious agent. It apparently has a definite value in the treatment of the Koch-Weeks bacillus, the Pfeiffer bacillus, and some of the virus infections which cause catarrhal conjunctivitis. That optochine and mercury or the iodides are incompatible, I cannot at this time believe, due to the lack of such case reports bearing this out and to the fact that none of the cases under my supervision have to date suffered any such ill effects. To the contrary, my small study would tend to show that both quinine and optochine can be used in conjunction with mercury and the iodides.

Although optochine and quinine as ocular therapeutic agents are still in their experimental stage, I can, with sincerity, state that both drugs are highly beneficial in their effects on infectious micro-organisms of the conjunctiva, the repair of ocular adnexa, and that they act synergistically with one another, and are not hampered by the use of their supposed antagonistic drugs such as mercury, iodides, bromides, lead, zinc, copper and ammonia, and that both drugs may be combined over long periods of time without producing injury to any of the ocular adnexa.

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DISCUSSION

Dr. Chas. A. Bahn (New Orleans): The popularity of drugs like many other things in life moves in cycles. We are now in a cycle of increasing interest in the applications of quinine. Dr. Robinson, with Selinger and others, is bringing to our attention that quinine has been neglected in ophthalmic therapy. They are finding new uses for our old friend cinchona. After all, many of our ultra-modern remedies represent old truths dressed in new clothes.

In ophthalmology, quinine as an installation anesthetic is rather inefficient. Its high pH makes it somewhat painful in effective strengths, when applied locally, unless buffer solutions are used. In pneumococcal affections of the cornea and conjunctiva its virtue has been attributed to its relative acidity rather than to bactericidal power.

To its action as an astringent is partly attributable its use in clearing corneal opacities, by temporarily at least dehydrating corneal infiltrations. Its sclerosing action which has made quinine a valuable adjunct in the treatment of hemorrhoids, has also found its application in ophthalmology. Here, it has been used in the injection treatment of vascular lid tumors. This same sclerosing power also is responsible for its experimental use in the treatment of corneal opacities.

As a parasiticide its uses are many and varied. Generally speaking, it is more lethal to animal than vegetable cells. In ophthalmology, we have adapted its application from the gynecologists who first employed it to kill spermatozoa in the vagina.

A generation ago, we were taught that all bacteria belong to the vegetable kingdom. Today we are not so sure. This is of especial interest in the local antiseptic treatment of conjunctival and corneal infections. Antiseptics directed against vegetable parasites are generally speaking not the same used against animal parasites in the eye as well as elsewhere in the body. Just why the pneumococcus should be more easily killed by quinine than other bacteria is not known. Possibly, the high pH of quinine and its allied alkaloids prepare the soil for its antiseptic actions specially against the pneumococcus. Quinine is being experimentally used in the virus diseases of the conjunctiva and cornea which include at least some of the herpetiform infections. Whether or not the filtrable viruses belong to the vegetable or animal kingdom is not known. The recent use of quinine in trachoma may help solve this problem.

Of the two forms of quinine used locally in ophthalmology, the bisulphate and optochin or neumochin, there seems to be but little therapeutic difference. Neumochin is the recent name given to ethyl-hydrocupreine, a quinine alkaloid previously marketed as optochin, a German trade name. Neumochin was developed in the treatment of pneumonia, because other quinine salts were frequently followed by undesirable symptoms. The frequency of pneumococcus conjunctivitis, ulcerative keratitis, and dacryo-cystitis is partly responsible for the importance of quinine installation therapy in ophthalmology. Neumochin is used locally in the conjunctiva in strengths of one half to one per cent and locally supplied in a two per cent solution. Quinine bisulphate is used in a four per cent ointment and in solutions as strong as ten per cent, locally applied.

I have watched with interest the experiments which Dr. Robinson has made with quinine in my clinic. I have used optochin in at least five hundred patients with the pneumococcal conjunctivitis and herpetiform keratitis mentioned above. My use of quinine bisulphate locally has been somewhat more limited. Its advantage in my opinion lies principally in the fact that it is cheaper and more easily obtained.

In conclusion, I wish to leave with you the thought that quinine is among the major local antiseptics in ophthalmology and also that its intelligent experimentation should continue for new fields of ophthalmic usefulness.

LATERAL PYELOGRAM AS AN AID IN THE DIAGNOSIS OF PERINEPHRITIC ABSCESS*

PRELIMINARY REPORT

JOHN G. MENVILLE, M. D.†
NEW ORLEANS

The roentgen ray has proved itself a valuable aid in the diagnosis of certain diseases of the genito-urinary tract. To some extent it has been of aid by means of plain roentgen ray films in the diagnosis of perinephritic abscess. This condition is at times difficult to diagnose by the methods ordinarily used and is often mistaken for other conditions. Appreciating that perinephritic abscess has a high mortality rate, any additional aid in the diagnosis of this condition should prove of some importance.

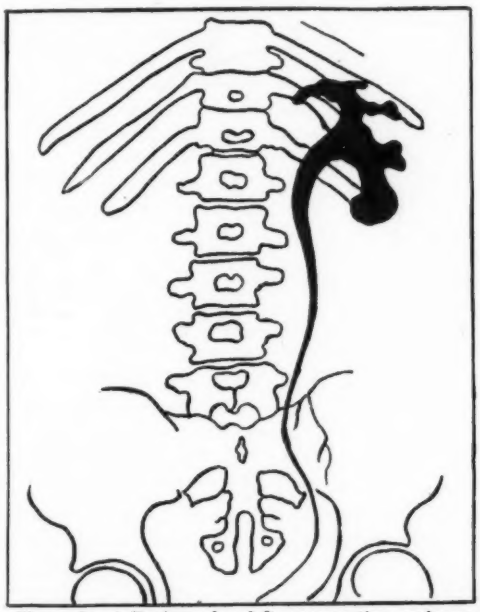
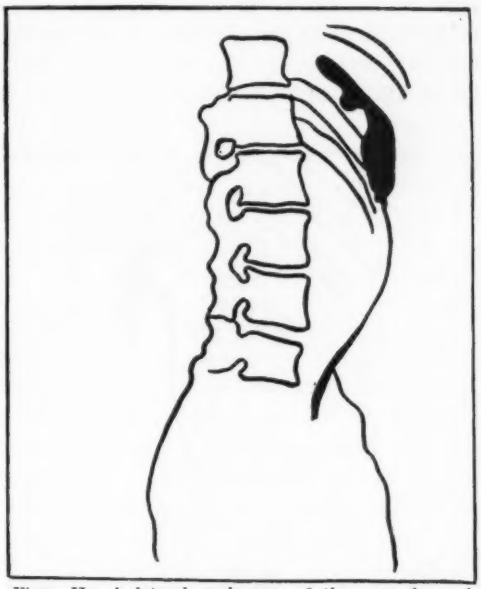


Figure I: A-P view of a left preoperative pyelogram in a case of a perinephritic abscess showing an enlarged pyelographic shadow with a compression of the upper calyx. The spine shows a curvature with the concavity pointing to the left side.



Figue II: A lateral pyelogram of the case shown in Figure I, presenting a marked anterior displacement of the kidney and an elongated, regular, smooth, arc-like anterior displacement of the ureter.

Recently it was my good fortune to make a certain observation on a patient with a perinephritic abscess upon whom a lateral pyelogram was made. This patient was clinically suspected of having a perinephritic abscess and this was confirmed by operation. The lateral pyelogram of this case disclosed the kidney and ureter to be displaced anteriorly in an elongated regular, smooth, arc-like fashion. In addition, it was noted that the ureter was more markedly displaced than the kidney. Four months after operation another lateral pyelogram was made and the roentgen ray films revealed the kidney and ureter to be in a normal position.

Lateral pyelograms often have been made for different pathologic conditions of the kidney and also in retroperitoneal lesions in which the kidney and ureter were displaced anteriorly, but in such cases the shadows observed in the pyelogram are not of the smooth, elongated, arc-like anterior displacement of the kidney and ureter as was found in the case herein reported.

The report of what is believed to be a new diagnostic procedure in a single case is prob-

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*Read before the Orleans Parish Medical Society, June 14, 1937.

†From the Urological Division of the Department of Surgery, Tulane University School of Medicine.

ably insufficient to be considered of unusual value as an aid in the diagnosis of perinephritic abscess; nevertheless, the fact that a lateral pyelogram showed the kidney and ureter to be in their normal position, following a drainage of pus from the perinephritic space, convinces me that this observation is worthy of being reported.

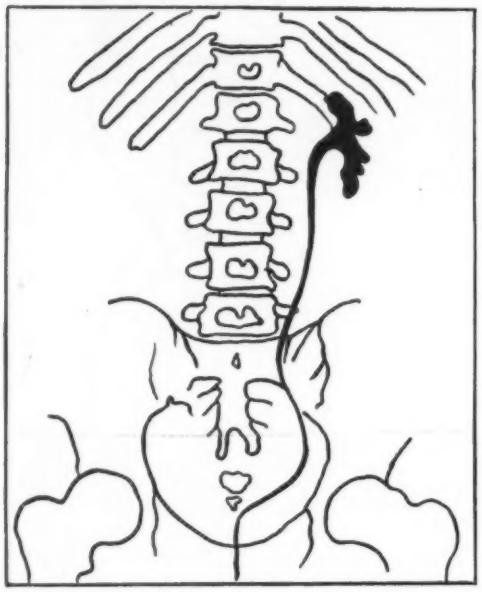

Figure III: A-P view of a left pyelogram taken on the same patient presented in Figures I and II, but four months after operation, showing the pelvis to be of normal size and shape. The spine is in a normal straight line. Compare with Figure I.

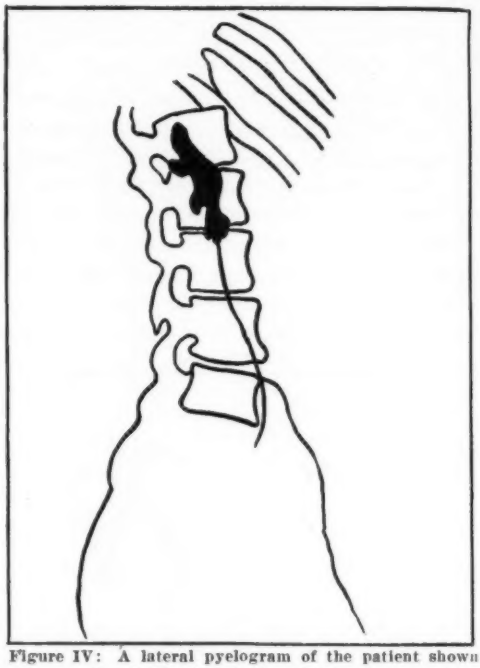

Figure IV: A lateral pyelogram of the patient shown in Figures I and II taken four months after operation, showing the kidney and ureter to be in normal position. Compare with Figure II.

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MEETING OF THE AMERICAN MEDICAL ASSOCIATION

The recent meeting of the A.M.A. at Atlantic City probably exceeded all other meetings from the point of view of attendance. Approximately there were over 10,000 doctors registered and several thousand members of doctors' families. This makes for a perfectly huge convocation, so big as a matter of fact that there are extremely few cities in this country that can take care of such a large crowd gotten together at one time for a period of a few days.

The very large number of attendants at this meeting showed that the gatherings in the past have been well worth while and that the men get a great deal out of them. Undoubtedly this year the same can be said as of the past meetings. Almost to a superlative degree this 1937 gathering presented a splendid program in an unexcelled manner. The huge auditorium at Atlantic City was filled with commercial and scientific exhibits. The former displayed all the newest food preparations, drugs, books and technical apparatus of legitimate makers of such. The scientific exhibit was extremely complete. The trip to Atlantic City would be well worth while merely to see the scientific presentations alone. However, the programs of the various sections were, for the most part, splendid. The papers were original, scientific and practical. Altogether the men who attended this annual convocation of the A.M.A. obtained in a concentrated form an immense amount of information. It should be the business of every doctor who can possibly do so to attend the A.M.A. meeting.

The South was well represented at the meeting. Louisiana doctors took an active part in the scientific program and in the exhibits. There was really an excellent attendance from Louisiana considering the long trip necessary to get to the Jersey coast. There were 47 Louisiana doctors in attendance.

The Association selected as their president-elect a Southern physician, Dr. Irvin Abell of Louisville, Kentucky, a man who has held practically all of the high honorary positions to which he is eligible in Southern associations and societies, indicative of his popularity and his worth.

BEFORE AND AFTER FORTY

Under this attractive title Dr. Charles H. Mayo has written a valuable and interesting article for the laity, appearing in Rotarian of June. In this article he points out what preventive medicine has done for man. Such articles are of great value, they instruct the laity

in a sane, sensible manner and they also make people realize how much medicine is reponsible for the longevity and good health of the present day generation.

It is not only because of the value of presenting information to the lay world but it is also because of Dr. Mayo's firm stand in regard to periodic physical examinations for the apparently well individual, that this paper stands out. He states that "some physicians and many of the laity scoff at periodic physical examinations." He points out that people go to the doctor if they have a pain or think anything is wrong but frequently they are not cognizant of any physical disturbance, or neglect it, with the consequence that early disease is neglected until no longer amenable to treatment or at least difficult to cure. He stresses the importance of these examinations and insists upon thoroughness of the examination. Probably one of the reasons that the population as a whole does not have a routine yearly physical examination is the fault of the doctor. He takes the pulse and blood pressure, listens to the heart, does maybe one or two other simple procedures and then gives the patient a clean bill of health. This examination should be made regularly, it should be thorough, complete and full. The patient's sensations should be analyzed fully and carefully at the time of the examination. How valuable it is in determining cardiac deficiency, to obtain the history of shortness of breath on slight exertion; how extremely important is it to know of discharges or bleeding from any of the body orifices; how absolutely essential is it to have information on many other similar disease expressions.

The periodic physical examination is important but there should be not only complete examination of the whole body but also there should be a careful history with meticulous attention to the patient's habits of life and a thorough going into the way of living. An examination such as this would make the occasional lay individual cease scoffing at the examination and would be of valuable assistance to them in maintaining good health.

PREVENTING ACUTE INTESTINAL OBSTRUCTION

In a recent number of an excellent new surgical publication, "Surgery", there appears a provocative article by Morris and Johnson* on hernia as an etiologic factor in acute intestinal obstruction. Their survey is based on an analysis of 130 patients with hernia who developed intestinal obstruction. These patients came from some of the surgical divisions of the Bellevue Hospital. In a period of 14 years there were 52,351 surgical cases admitted to the services and of which 3,432 were classified as hernias of various types. In analyzing the statistics it is interesting to note that of 130 cases of hernia with acute intestinal obstruction the highest incidence was in the first ten years of life, 16 per cent of cases. Subsequently there was a drop in the second decade of life with a gradual rise in the sixth decade when 23 per cent of patients developed their obstruction. The incidence in the male babies was very high and female babies low. As a matter of fact acute intestinal obstruction as result of hernia was of no significance until the fourth or fifth decade of a female's life when its frequency was about that of the male. Another interesting statistical observation is that 4 per cent of hernias are at some time or another complicated by obstruction and that this 4 per cent represents 54 per cent of all cases of intestinal obstruction from any cause.

The majority of cases of obstruction were due to external hernia but internal hernia, a comparatively rare condition, is very much more likely to cause obstruction, that is in terms of per cent of such cases, than is the external hernia. The unfortunate fact about the internal hernia when obstruction takes place is that it is clinically silent until complications take place and then it is impossible in most instances to carry out the principles of treatment of external hernia, reduction of hernial contents and obliteration of the sac.

The authors comment briefly on the symptoms of hernia obstruction; they do accentuate rather forcibly the significance of the condition

*Morris, J. H., and Johnson, V. S.: Hernia as an etiologic factor in acute intestinal obstruction, Surgery, 1:903, 1937.

called shock and most notably observed in older patients. In three instances, incidentally, shock was so far advanced nothing could be done operatively for the patients and amongst the 38 deaths which happened in patients operated upon, 39 per cent were due to shock. This observation is of considerable importance because from the study of the statistics the authors think that operation should be delayed in advanced cases complicated by shock until this factor can be eliminated. On the other hand, the early obstructive cases "are the logical operative emergencies". If the patient is in shock, of course the first indication is restoration of fluids and naturally whole blood best meets the indications. Unfortunately glucose and saline solution or normal salt solution are of secondary value because their effect is short-lived, and for this reason should be given in very large amounts by slow intravenous drip. The subsequent treatment is the release of the obstruction which of course is the primary objective for surgical procedure.

Although the interesting information which has been briefly accounted in the above paragraphs is of great value, probably the most important features of this paper are the statements: first, that relatively and absolutely, hernia is the most important amongst all causes of acute intestinal obstruction and second, an obvious corollary, that prophylactic herniotomy is advisable in all patients with hernia. As the authors say, this operation is a small price to pay for insurance against the possibility of intestinal obstruction with its attendant dangers which may culminate in death. Surely this point should be stressed and emphasized to all prospective candidates for the relief of hernia. An operation should not be unnecessarily postponed and should not be neglected interminably.

HOSPITAL STAFF TRANSACTIONS AND CLINICAL MEETINGS

GRADUATE SCHOOL
LOUISIANA STATE UNIVERSITY
MEDICAL CENTER
NEW ORLEANS

The scientific meeting of June, 1937, was called by Doctor J. T. Nix, Director of the Graduate School. Doctor E. von Haam presented the following paper:

PREDISPOSITION TO CANCER

According to Lubarsch, predisposition towards a disease is a particular condition of organisms which makes them susceptible to the effect of injurious influences. Our reaction towards these injurious factors, external or internal in nature, is dependent upon the constitution of the organism, a condition principally determined by inherited characteristics and their variations during the evolutionary stage (Pende). Opinions regarding the importance of a predisposition to cancer in the human race are sharply divided. While some authors, e. g., Willy Meyer, believe that there is an inherited or acquired cancer susceptibility in every case of malignant growth, Lewin and others warn against an over-estimation of the constitutional basis as long as our knowledge of irritating factors is still so limited. A study of our vital statistics demonstrates clearly that race, age and certain living conditions seem to have definite influences upon the occurrence of cancer in families. Cancer amongst the American Indians, the negroes and the uncivilized population of Africa is unquestionably rarer than it is amongst the white race. Italy is less afflicted by the disease than England and Switzerland. The prevalence of malignant tumors in the age groups between 50 and 70 is a well known fact. While this could be simply explained by the time factor, a seemingly necessary requisite for the development of a malignant growth, examination of Freund and Kaminer and his school seems to demonstrate a difference in the proteolytic activity of the serum of old and young persons, which may be the constitutional factor involved. The lip cancer of pipe smokers, the skin cancer of Kashmir, the bladder tumors of chimney sweepers and aniline workers are well known in the literature and always cited in favor of the theory that cancer is caused by local irritants such as tobacco juices, heat or aniline dyes. However, the fact that only a small percentage of all persons exposed to these aforementioned irritants contract cancer while the vast majority (about 90 per cent) remain free of a malignant growth speaks strongly in favor of the presence of an endogenous factor which predisposes some people to the development of a malignant growth. Even more convincing evidences of the presence of such a "predisposing factor" are those cases in which, presum-

ably, a single act of trauma, such as a blow to the breast, precipitated cancer. The importance of heredity in cancer is illustrated by the existence of numerous so-called families in whom not only the development of cancer is hereditary, but also in whom cancer develops in identical locations and has similar histopathological types. The question of simple familial coincidence in these cases must be excluded on the basis of the rules of probabilities. These and numerous other examples from the statistics on cancer demonstrate with increasing conviction that a predisposition to cancer actually exists and must be counted as an important internal factor in the etiology of this disease.

Chronic local irritation, once thought to be the chief cause of cancer, has become less important since we know that, experimentally, cancer may be produced in some animals with any of these "local irritants" and that there is no specific correlation between the cancerogenic agent and the type and frequency of tumors produced. The inflammatory lesions produced by these irritating factors may or may not develop into cancer and the term "precancerous lesions" will mean nothing unless we know whether this person is predisposed to cancer or not. In some persons any area showing some cellular destruction with inflammatory reaction may present a precancerous lesion, while in others, the same type of lesion will never produce a malignant growth. Therefore, the first step that must necessarily be taken for the successful prevention of cancer must be the recognition of this precancerous state of the cancer-disposed patient. We are not able to do this at the present time.

Neither biochemical nor immunological examinations on normal persons or persons belonging to cancer families have revealed anything which may be taken as the expression of a cancer disposition. My own extensive investigations on over 500 relatives of cancer patients have been fruitless in this respect. Most of the so-called "cancer reactions" such as the Roffo reaction or the Freund and Kaminer reaction are probably caused by the metabolic effects of an already established malignant growth and not by the cancerous constitution of the individual. The same can be said concerning most of the biochemical changes found in cancer patients such as the shift of the calcium-potassium quotient in the serum, changes in the blood sugar level, the content of lactic acid and the hydrogen ion concentration of the blood. None of these changes are consistent and none indicates an existing predisposition for cancer.

The methods of constitutional medicine as practised by Draper and others seem to me to offer a more promising solution of this problem than any other single method. The correlation of various methods of examination such as are practised by this school is an excellent means of discovering new facts and of avoiding errors which the use of a single method of examination would inevitably produce. Determination of the endocrine formula, anthropometric measurements, pharmacodynamic and even psychological tests should be tried since biochemical and serological methods have failed and whether they are successful or not, they are certainly worthy of trial.

SUMMARY

Analysis of cancer statistics demonstrates the existence of an individual predisposition towards cancer. The exact nature of this disposition is unknown except that it seems to follow certain hereditary laws. Our present methods of studying the problem of our disposition to cancer have failed and it is suggested that the methods of constitutional medicine may offer a better solution of the problem.

SOUTHERN BAPTIST HOSPITAL

The last staff meeting until the fall was held at Southern Baptist Hospital on Tuesday, June 22, 1937 at 8 p. m.

The scientific program consisted of two papers: 1. "Diagnosis and Management Occiput Posterior" by Dr. E. L. King; 2. "Indications and Contraindications for Tubal Insufflation" by Dr. H. B. Alsobrook.

Following the presentation of these papers, the monthly death report was read.

HUTCHINSON MEMORIAL CLINIC

Scientific Session conducted by the Department of Urology, Dr. Edgar Burns presiding.

General Discussion of Urinary Infections (Dr. Edgar Burns, Department of Urology): The management of patients with an infected urine is related inseparably to the procedure of study and examination. The usual preliminary routine will give good presumptive evidence of the location and type of infection, and if it is acute, will determine usually the indication or contraindication to the use of instruments. An effort should be made to determine as early as possible the clinical class of the infection, for once infection has been classified properly the procedure of treatment becomes fairly clear even though the result is not always satisfactory.

Many different organisms are found but the majority of cases are due to colon bacilli, either escherichia or aerobacter aerogenes. Other organisms are bacillus pyocyaneus, staphylococcus, streptococcus and bacillus proteus. Fortunately, the colon infections most commonly found are the ones most easily eradicated. On the other hand the organisms that split urea, of which proteus is the chief offender, are most resistant to

treatment. This type of infection leads to very early stone formation and rapid destruction of renal tissue, hence the importance of early recognition and eradication of this group.

In any discussion of urinary infection, the part played by stasis in the urinary tract and foci of infection should be emphasized. Stasis may be produced by stricture of the urethra, prostatic hypertrophy, cord or paralyzed bladder, diverticulum, stone, ureteral stricture and hydronephrosis. It is absolutely impossible to make any impression upon infection until stasis is eliminated. For that reason the first step is the use of whatever methods are indicated to remove any of the above found to be present. Foci of infection may not prevent the urinary tract from being cleared of infection but the story is that of repeated recurrences. Infection in the teeth, tonsils, sinuses, prostate and seminal vesicles in the male, cervix in the female, gut, and so on, should be looked for and removed when found, in an effort to obtain a permanent cure.

TREATMENT

Internal medication is a popular method of treatment in spite of the fact that results are almost wholly unsatisfacory and unreliable. Drugs administered by mouth or intravenously, ultimately reach the kidneys to be excreted into the system of urinary tubules and reservoirs before being passed out of the body. The normal renal pelvis has been shown to empty itself in three to five minutes and the passage of the urine along the ureters occurs in a series of very rapid movements. It is a usual clinical experience to find that in the presence of acute infection the emptying of the pelvis and calices is still more rapid, the normal capacity reduced and the walls of the cavity in a hypertonic state. It would seem therefore that the sterilizing effort of any drug must be inefficient because of the short period of time that it remains in the renal pelvis. In the bladder, however, a certain degree of stasis is normally present, and here more can be expected of substances introduced into the urinary system. (Hinman)

The bewildering number of urinary antiseptics on the market today is sufficient evidence that none has been found to be entirely satisfactory. A few of these, however, seem worthy of more or less consideration.

Urotropin has been used for 40 years. At first it was believed to possess antiseptic powers in itself but this was soon disproved and its activity shown to depend upon its hydrolysis to formaldehyde in the presence of an acid solution.

"Hinman determined the antiseptic and disinfectant power of formaldehyde itself for bacteria. He used the colon bacillus, streptococcus aureus and staphylococcus albus, and found that to kill them in 20 minutes a high concentration of 1 in 200 to 300 was needed. The same organisms were prevented from growing during a period of 48 hours by strengths of from 1 in 30,000 to 50,000. He further examined the amount of formaldehyde appearing in urine of patients receiving 45 grains of urotropin daily by mouth. In specimens of urine obtained by direct catheterization of the kidneys a concentration of 1 to 60,000 was attained in five only out of twenty-three cases. Out of a total of 318 examinations he found a definitely germicidal strength of formaldehyde in 5 per cent only and an antiseptic strength in 17 per cent. He draws attention again to many of the limitations of the use of urotropin, as in pyelitis, the short period of time the urine remains in the kidney area, and similarly in cystitis, the frequency of urination reducing the time for the hydrolytic process to take place." It is probably most effective when given in large doses, 60 to 120 grains daily, and supported by some drug to acidify the urine. Ammonium chloride can be obtained in 7½ grain enteric coated tablets and has been found satisfactory for this purpose when given in amounts of 45 to 60 grains daily. Occasionally, the urotropin may upset the stomach and in such cases may be given intravenously. Fruit juices and alkalis should be eliminated from the diet as they reduce the acidity and may actually render the urine alkaline.

According to the work of Davis and Sharp, acriflavine is antiseptic to the colon bacillus and staphylococcus. They used 0.2 gram doses and apparently it is best given in capsules as no results were obtained when shellac coated pills were prescribed. It requires the presence of an alkaline urine.

Methylene blue is an old remedy which has received but scant attention for many years. A few recent articles point out that the dye is as good, if not better, in inhibiting bacterial growth in the urinary tract than any of the drugs that color the urine.

Pyridium has been strongly supported by some of the American urologists and an occasional good result is most likely obtained from its use. Critical investigators, however, state that it is practically inert and only colors the urine. It is my feeling that patients with distressing bladder symtoms, especially those with acute gonorrheal posterior urethritis, are made more comfortable by it.

Hexylresorcinol may sometimes be of value in the treatment of alkaline infection. It requires a limited fluid intake for efficiency.

Good results have been reported from the use of mercurochrome. It may be given by mouth in the form of enteric coated pills, may be injected intravenously or used locally as an antiseptic ir-

rigation of the urinary tract. When used intravenously, the dose should not exceed 10 c. c. of a 1 per cent solution. Mercurochrome should not be used in the presence of severe kidney damage.

Neosalvarsan is almost specific in some of the coccal infections and rarely may be of benefit in bacillary types. It is used in very much the same manner as in treating syphilis, the same precautions in regard to renal function being observed. Just why it acts as a urinary antiseptic is not entirely clear.

Crance and Maloney claim good results from nitrohydrochloric acid. They believe that a strongly acid urine is bactericidal to colon bacilli. I have used the drug in a fair number of cases during the past 18 months and am unable to report a single cure.

The ketogenic diet as advocated by Helmholz and Clark may be regarded as a definite therapeutic triumph. The production of ketonuria pH 5.2 or below renders the urine unquestionably bactericidal. The diet contains a minimum of carbohydrates, a small quantity of protein, and a maximum amount of fats. The most simple way of administration is to give two eggs and one-half pint of whipping cream for each meal, nothing else. This should be continued for more than one week. The patients often complain of nausea, weakness, shortness of breath and pain in the back and legs, and if too disagreeable, it may have to be stopped. Cures in 75 per cent of cases are reported from some quarters. In our own work over a period of two and a half years, slightly more than 50 per cent have remained well.

Through the work of Rosenheim, mandelic acid has recently appeared as a urinary antiseptic. It was long known to be excreted unaltered by the kidneys but only recently proved to be relatively non-toxic. Clinical trials have shown it to be a simple and efficient remedy in chronic urinary infections uncomplicated by obstruction. Successful cases have mostly started to improve after a few days on the drug and the urine has usually become sterile in 10 to 21 days. Fluids are restricted to insure sufficient concentration of the acid in the urine. Ammonium chloride may be added in appropriate doses to bring about the desired pH value. Frequent examination of the urine for albumin and casts should be made as the drug is slightly irritating to the kidneys. Citrus fruits, alkalis, spinach, olives, beans and molasses should be eliminated from the diet as they tend towards the production of an alkaline urine. Cures are reported in about the same number as from the ketogenic diet, but mandelic acid has the advantage of being more simple and much easier to take.

In prescribing urinary antiseptics it must be remembered that a renal function within reasonable limits of normal is essential. Kidneys that are unable to concentrate urine are likewise incapable of concentrating drugs in sufficient amount to kill infection. It should be remembered also that all patients and all infections do not react in the same manner and that in changing from one drug to another, one may be found that will produce a good result.

If satisfactory improvement is not obtained in a reasonable period from rest, fluids and urinary antiseptics, one should resort to local treatment if the best results are to be had. Cystoscopy with lavage of the renal pelvis with one-half per cent silver nitrate is often found to shorten the course of the disease. It is our custom in severe cases with chills and fever to leave indwelling catheters in place until the acute symptoms have subsided. In this way, irrigation of the renal pelves may be done one or two times daily as indicated.

Eighty-five per cent of urinary infections can be cured by one method or another. The other 15 per cent can usually be cured from the patient's standpoint, for they are not incapacitated and feel well, but from a scientific standpoint they are not well because the urine still shows organisms.

Brief Report on Use of New Urinary Antiseptics in Hutchinson Memorial Clinic (Dr. W. E. Kittredge, Department of Urology): I wish to report on the use of mandelic acid in this clinic. I have gone over 12 completed cases in which this drug has been used and find that nine have been cured and three have been failures. Our criteria of cure are: three negative smears of the urinary sediment and a negative culture whenever it is possible to obtain one.

The organisms involved in these 12 cases were as follows: Nine were pure colon bacillus infections; one was an alkaline proteus bacillus infection; one was a mixed staphylococcus and colon bacillus infection, and one was a colon bacillus bacilluria, which means that the urine contained large numbers of the bacilli with almost no pus cells. The cause of this last condition is usually some obscure or chronic focus of infection, very hard to reach or eradicate either mechanically or by the use of oral antiseptics. I may say further that these three failures had been tried on every other known form of treatment, and that we had entertained little hope of cure even before treatment was begun.

Perhaps it would be of interest to describe our technic in the administration of this drug. The drug used in this department has been the elixir of mandelic acid. Two other preparations have been tried, but this elixir has been found to be the most satisfactory. It is prescribed in quantities of from 8 to 16 ounces, usually beginning with a small amount in order to determine first whether or not the patients will tolerate the drug.

If they do not tolerate it, then they will not have bought a large quantity of useless medicine. The drug is expensive, costing at present in the neighborhood of $5.00 for one pint of the elixir. The dose prescribed is one tablespoonful four times a day. Patients are put on a restricted fluid intake of 1200 c. c. daily in order to concentrate the drug more effectively in the urine. A somewhat crude effort to produce a high acid ash diet is attempted by prohibiting the use of all alkalis, all fruit juices, beans, olives, spinach and molasses. The effectiveness of mandelic acid is to a large degree dependent upon the acidification of the urine. Therefore, the pH of the urine of these patients while under treatment is very closely watched. For this purpose, we use a very simple and cheap pH determinator consisting of strips of paper impregnated with nitrazine, which paper is wet with the urine and then its color compared to an accompanying color chart. This is the simplest and cheapest of all pH determinators, has been checked time and again by us, and has been proved to be as accurate as any of the more expensive indicators provided it is properly used.

It is known that mandelic acid can exert no bactericidal action in a urine, the pH of which is above 5.7. Helmholz has shown that even at this level, a concentration of one per cent of mandelic acid is necessary to produce bactericidal action. However, at a pH below 5, only 0.25 per cent concentration of mandelic acid is necessary. Therefore, it is of much importance constantly to check the acidity of the urine and be certain to achieve the desired pH. Our clinical rule is that any patient whose pH does not fall to 5.2, or less, with the use of the mandelic acid preparation alone, is given ammonium chloride in doses of 20 grains four times daily, in the form of enteric coated tablets, to produce the desired acidity. The patients are kept on this routine for a period of from two to three weeks. It is usually noted that whatever symptoms the patient is suffering from at the time treatment is begun are usually relieved within the first several days of treatment. If the treatment is to succeed, the urine rapidly becomes free from pus and organisms as far as stained smears can determine. However, the treatment is maintained for a period of at last a week after negative smears are obtained. Should a course of treatment fail to produce the desired effect, we usually wait for a period of from two to four weeks and then repeat the course. Occasionally, the second course will eradicate the infection. The largest number of courses that we have given here has been four and the longest single course has been twenty-three days.

The ill effects produced by the use of mandelic acid have been slight, the most common of which have been nausea and symptoms of indigestion while taking the drug. A rare complication noted in this clinic has been a skin rash, which, we feel sure, was due to the acid, as it disappeared on cessation of treatment and reappeared when treatment was resumed. We routinely examine the urinary sediment of patients while under treatment to guard against renal injury due to the drug. So far, however, we have seen no evidence of red cells or casts in any of our patients and, therefore, assume that we have produced no renal damage. There are no age limitations to the use of this drug. The only definite contraindications to the use of mandelic acid are advanced renal disease with loss of function and secondary factors of stasis, obstruction or foreign bodies in the urinary tract, which preclude the possibility of eliminating an infection. The alkaline urea-splitting infections have been found resistant to all forms of treatment, and this is no less true with the use of mandelic acid, as attested by our one case of proteus bacillus infection which resulted in complete failure even after three courses of treatment.

In conclusion, I may say that we are at present trying out two even newer drugs in the treatment of urinary infections, namely, phenyl-mercuric nitrate and prontylin. We have a number of cases now taking these drugs, but, as yet, are unable to report our results, as the patients are still under treatment.

NORTH LOUISIANA SANITARIUM

The meeting of the Staff of the North Louisiana Sanitarium was called to order by the President on March 23, 1937, with 22 doctors present. After the disposal of routine business, attention was turned to the scientific program.

Dr. Mays reported on a case of anemia of pregnancy, discussing the treatment and its complications. The case was discussed by Dr. Trifon.

Dr. Heard then reported a case that had suffered acute rupture of the appendix at the age of 12, seven years ago. At operation, a drain was inserted and the usual conservative treatment carried out. Patient made an uneventful recovery. Three weeks ago, March 3, patient was readmitted to the Hospital with acute lower abdominal pain, fever and leukocytosis. On the basis of the past history and non-removal of the ruptured appendix seven years ago, fever, leukocytosis and pain, a diagnosis of ruptured appendix was again made. At operation, it was found that the terminal end of the appendix had ruptured, The appendix was successfully removed, drain inserted and the patient had an uneventful post-operative course. The case was interesting from the standpoint that the patient had peritonitis twice and recovered.

There being no further business, the meeting adjourned.

H. M. Trifon, M. D., Sec.

TRANSACTIONS OF ORLEANS PARISH MEDICAL SOCIETY

JULY 5. Board of Directors, Orleans Parish Medical Society, 8 p. m.

JULY 5. Pathologic Conference, Hotel Dieu, 8:15 p. m.

JULY 6. Eye, Ear, Nose and Throat Staff, 8 p. m.

JULY 7. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

JULY 7. Mercy Hospital Staff, 8 p. m.

JULY 9. French Hospital Staff, 8 p. m.

JULY 12. ORLEANS PARISH MEDICAL SOCIETY, 8 p. m. Following this meeting, the Society adjourns during the months of July, August and September.

JULY 14. Touro Infirmary Staff, 8 p. m.

JULY 15. Eye, Ear, Nose and Throat Club, 8 p m.

JULY 16. I. C. R. R. Hospital Staff, 12 noon.

JULY 19. Hotel Dieu Staff, 8 p. m.

JULY 20. Charity Hospital Medical Staff, 8 p. m.

JULY 21. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

JULY 21. Charity Hospital Surgical Staff, 8 p. m.

JULY 27. Baptist Hospital Staff, 8 p. m.

JULY 28. Clinicopathologic Conference, Touro Infirmary, 11:15 a. m. to 12:15 p. m.

During the month of June, besides the regular meeting of the Board of Directors, the Society held one regular scientific meeting and one joint clinical meeting at the United States Marine Hospital. At the meeting held Monday, June 14, the following program was presented:

Dr. Reynaldo Dos Santos, Professor of Surgery, University of Lisbon, Portugal—Arteriography.

Dr. Rudolph Matas—Vascular Surgery.

Dr. J. Ross Veal—Exhibit on Arteriography.

Dr. Rigney D'Aunoy and Dr. Emmerich von Haam—Exhibit on Aneurysms.

In line with a resolution unanimously passed by the American Laryngological Association, Dr. LeJeune offered a motion at this meeting calling upon the Congress to pass legislation making a supply of helium available to authorized institutions for the relief of sufferers from asthma, lung or throat tumors, pneumonia and other causes of asphyxial death.

The Secretary was instructed to contact our Senators and Representatives soliciting their aid in making helium available to medical science. Motion unanimously passed.

The following program was presented at the Clinical Meeting at the United States Marine Hospital, June 28:

1. Rupture of the Biceps Brachii.
   By:.....Dr. Richey L. Waugh
   Discussed by Dr. Waldemar R. Metz.
2. The Pathologic Physiology and Pathology of Experimental Gas Gangrene.
   By.....Dr. Joseph G. Pasternack
   Discussed by Dr. John A. Lanford.
3. Public Health Aspects of the Recent Flood.
   By:.....Mr. Howard N. Old
   Discussed by Dr. Winfield K. Sharp.

Refreshments were served following the meeting.

Dr. F. L. Jaubert was re-elected President of the Louisiana Society for Crippled Children at its annual meeting held Friday, May 28.

Dr. H. L. Kearney attended the meetings of the American Otological Society held at Long Beach, Long Island, May 27-29, and the Triological Society held at Atlantic City, June 1-4.

At the meeting of the Tangipahoa Parish Medical Society held at Hammond, Louisiana, on Thursday, May 20, Drs. Roy E. de la Houssaye, Frederick L. Fenno, Emmett Irwin, and M. T. Van Studdiford read papers.

Touro Infirmary will be represented at the International Hospital Conference to be held in Paris, France, July 6 to 11. The Board of Managers has announced that Dr. A. J. Hockett, Superintendent of Touro, will represent the institution at this conference.

It has been announced by Tulane University that Dr. John Taylor Halsey, head of the Department of Pharmacology of the School of Medicine who has served in that Department since 1924, will retire at the close of the current school year. Dean Bass announces that Dr. Erwin E. Nelson of Ann Arbor, Michigan, will succeed Dr. Halsey as head of the Department of Pharmacology.

Dr. Elizabeth Bass attended the meetings of the American Medical Association and the Medical Women's National Association held in Atlantic City, June 7-11. Following these meetings, she will go as a delegate to the Fourth Congress of the Medical Women's International Association, which meets this year in Edinburgh, Scotland, July 13-19. The general subjects for the meeting will be "Cancer in Women and Its Prevention" and "Maternal Mortality." The delegates will be entertained in London by the British Medical Women's Federation, with visitis to schools and hospitals, one notable hospital being the Marie

Curie Hospital. They will also be entertained in Paris by the French Association of Medical Women. Preceeding these meetings, Dr. Bass will visit with several officers of the Medical Women's National Association, and will tour to hospitals in Southern Europe and Asia Minor which were established by this Association during the World War.

Dr. Laurence R. DeBuys presided at the annual convention of the American Academy of Pediatrics in New York, June 3 to 5. After the Academy adjourned Dr. DeBuys attended the meeting of the American Medical Association in Atlantic City.

Dr. E. Harold Hinman resigned as an Associate Member of the Society because of removal to Wilson Dam, Alabama, to assume duties in the Health Section of the Tennessee Valley Authority.

We regret to report the death of Dr. Russell E. Stone, one of our Active Members.

TREASURER'S REPORT
MAY

ACTUAL BOOK BALANCE: 4/30/37	$3,818.31
May Credits	470.41
TOTAL CREDITS	$4,288.72
May Expenditures	681.58
ACTUAL BOOK BALANCE: 5/31/37	$3,607.14

LIBRARIAN'S REPORT
MAY, 1937

The 38th meeting of the Medical Library Association was held in Richmond, Virginia, May 22-26, 1937. The Medical College of Virginia and the Richmond Academy of Medicine were the official hosts. The meeting was largely attended with a registration of 88 medical librarians from all parts of the country. Miss Marshall represented our Library and that of the Tulane University School of Medicine.

The program afforded much interest of a technical and historical nature. Round table conferences for medical school libraries, medical society libraries and dental libraries offered an opportunity for free discussion of library problems and methods. Miss Marshall read a paper on Plantation Medicine,—the organization for the preservation of health on the old plantations and the planning for medical care in time of illness.

Exhibits of rare medical books and medical silhouettes, medical history in Richmond, evolution of costume of physicians and of means of transportation, from the days of the rowboat and the saddle-horse to the present-day aeroplanes, aroused much interest.

Opportunity was accorded for visits to Washington and Lee University, University of Virginia, Medical College of Virginia, and William and Mary College.

Following the meeting, Miss Marshall went on to Washington to do some special reference work in the Library of Congress for three days.

Attendance at such a meeting, devoted solely to the interests of medical libraries is of inestimable value, not only in offering an opportunity for visiting medical libraries and in taking part in technical discussions of library procedures, but even more because one thereby meets personally those who are workers in the same special field, and is able to exchange with them suggestions as to methods and solutions of medical library problems.

NEW BOOKS—MAY, 1937

Royster, H. A.: Medical morals and manners. 1937.

Wexberg, Erwin: Our children in a changing world. 1937.

Jenkins, H. P.: Terminology of operations of the University of Chicago Clinics. 1935.

Kahn, R. L.: Tissue immunity. 1936.

Mason, R. L.: Preoperative and postoperative treatment. 1937.

Morris, Margaret: Maternity and postoperative exercises. 1936.

Tirala, L. G.: Cure of high blood pressure by respiratory exercises. n.d.

Blanchard, C. E.: Handbook of ambulant proctology. 1937.

Stevenson, G. S.: Child guidance clinics. 1934.

LeFleming, E. K.: Introduction to general practice. 1936.

Thornton, Janet: Social component in medical care. 1937.

Newcomer, M. S.: Bewildered patient. 1936.

Hoffman, F. L.: Cancer and diet. 1937.

Rienhoff, William, Sr.: Principles and foibles of cancer research. 1936.

Kuntz, Albert: Text-book of neuro-anatomy. 1936.

Davis, A. E.: Cataract, its preventive and medical treatment. 1937.

Gifford, S. R.: Hand-book of ocular therapeutics. 1937.

Diethelm, Oskar: Treatment in psychiatry. 1936.

White, P. D.: Heart disease. 1937.

Fisher, W. A.: Senile cataract. 1937.

Thornton, E. Q.: Medical formulary. 1937.

Trumper, Max: Memoranda of toxicology. 1937.

Medical Directory (British), 1937. 1937.

American Association for the Study of Goiter Transactions. 1932-1936.

Practitioner's Library of Medicine and Surgery. V. 12. Hygiene and Preventive Medicine. 1937.

American Therapeutic Society Transactions.

1935-36.

William Allen Pusey, by his friends and co-workers. 1937.

U. S. Childrens' Bureau: The child from one to six. 1931.

A.M.A.—Medical economics bureau—Introduction to medical economics. 1935.

Julius Rosenwald fund: Eight years' work in medical economics, 1929-36.

Iiams, T. M.: Preservation of rare books and manuscripts in the Huntington Library. 1932.

Gilbert C. Anderson, M. D., Secretary.

LOUISIANA STATE MEDICAL SOCIETY NEWS

SECOND DISTRICT MEDICAL SOCIETY

A regular meeting of the Second District Medical Society was held in the beautiful old Colonial Home at Destrehan, La., the evening of June 17, 1937.

The Second District Medical Society is considered by organized medicine as a very active and important medical organization. The membership is composed of physicians who are residents of several parishes near New Orleans.

Dr. F. S. Herrin, of Destrehan, La., President, and during his tenure of office he has initiated certain innovations which have been of considerable help to the Society. His activities in organized medicine have fitted him splendidly for the office he occupies.

The guest speaker of the evening was Dr. John G. Menville, Instructor in Urology at the Tulane Medical School. He spoke at length on urinary tract infections, expatiating on the effect certain drugs had on such infections, and illustrating his talk with numerous roentgen ray films of interesting cases. A lengthy discussion followed, participated in by a number of the physicians present.

Dr. Herrin, acting as host, entertained the members of the Society and invited guests at a supper. Those present at the meeting were: Dr. Wm. B. Clark, Dr. L. W. Alexander, Dr. N. K. Edrington, Dr. L. J. Menville, Dr. R. F. Sharp, Dr. J. G. Menville, and Dr. A. H. Sellman, all of New Orleans; and Dr. J. S. George, Metairie Ridge; Dr. J. S. Kopfler, Kenner; Dr. J. S. Parker, Reserve; Dr. L. O. Waguespack, Vacherie; Dr. L. T. Donaldson, Hahnville; Dr. P. A. Donaldson, Reserve; Dr. J. E. Clayton, Norco; Dr. W. M. Guillotte, Dr. E. P. Feucht, La Place, and Dr. John W. Atkinson, Gretna, La.

J. W. Atkinson, M. D., Sec.

SEVENTH DISTRICT MEDICAL SOCIETY

The Seventh District Medical Society held its quarterly meeting June 10, 1937, at Opelousas, Dr. Olin W. Moss, Lake Charles, presiding. Forty-seven members and five guests were present.

Dr. Shirley C. Lyons, New Orleans, spoke on, "Carbuncles: A New Conservative Method of Treatment," and Dr. Willard R. Wirth, New Orleans, presented a paper, "Heart Disease and Pregnancy." Both papers were highly interesting and instructive and were well received by the members of the Society.

The next speaker introduced by Dr. Moss, was Dr. C. M. Horton, Franklin, president of the Louisiana State Medical Society, who graciously accepted an invitation to attend this meeting. He spoke on the need of better organization of the profession; on the effects of socialized medicine; on a new plan of group insurance for the State Society; on the effective work of the legislative committee; and on the great need and desirability of the younger members of the profession taking an active interest in organized medicine.

Dr. Fred Mayer read a resolution on the dangers of carbon monoxide gas, which was adopted by the organization. Dr. J. M. Whitney, Jennings, presented a resolution on the need of a Public Health Laboratory in southwest Louisiana, which was also adopted.

The September meeting is to be held in Lake Charles.

SHREVEPORT MEDICAL SOCIETY

The regular meeting of the Shreveport Medical Society was called to order by the President on June 1, 1937, with 30 members and one guest present. The minutes of the previous meeting were read and adopted.

Reports: The Treasurer reported a balance on hand of $1384.03, of which $900.00 was allocated to the building fund.

Dr. Crebbin, Chairman of the Public Health and Legislation Committee, gave a brief report of his Committee's activities in investigating certain irregular practitioners, but stated that no definite results had been obtained as yet.

This was the annual economics meeting prescribed by the constitution. Dr. Heidorn read a letter from Dr. Barrow in which he pointed out that it was advocated by both the State and Local Societies that the names of the physicians broadcasting under the auspices of the Medical Society be announced. Dr. Barrow also called attention to advertisements of certain drug stores, which were considered improper. Finally, Dr. Barrow,

in his letter, stated that he had heard a rumor that some of the hospital insurance associations were contemplating extending to include medical benefits. Dr. Lucas made a motion that a special committee be appointed to cooperate with the Public Health and Legislation Committee to investigate the improper practice of medicine by druggists and that this committee have authority to carry out any action or to make any recommendation to the Society it deemed advisable. No action was taken by the Society on the other matters.

Dr. Wolfe made a motion that the Society consider publishing each year a list of the members in good standing of the Shreveport Medical Society so that the public may be informed who they are. He included in his motion that the matter be referred to the Ethics Committee for investigation and report. This motion was duly seconded and carried.

Dr. Bodenheimer made a motion that the officers of the Society contact the local papers and see if they will publish as news the names of those who read papers before the Society, the list of doctors attending the meeting and any matters of public interest. This motion was duly seconded and carried.

Unfinished Business: The oath of membership was administered to Dr. W. M. Hall by the President.

New Business: Applications for membership in the Society were received from Drs. C. E. Boyd and C. S. Holt. Being found in proper order, the Society ordered that they take the usual course.

Paul D. Abramson, M. D., Sec.

TRI-PARISH MEDICAL SOCIETY

The regular meeting of the Tri-Parish Medical Society was held at Tallulah on June first in the rooms of the Tallulah Book Club. The following members were present: Drs. J. P. Davis, President, B. J. Aymond, L. B. Landry and William H. Hamley, Secretary, of East Carroll Parish; G. W. Gaines, E. O. Edgerton and L. Stevens of Madison Parish; D. W. Kelly, B. L. Bailey and F. A. LaCour of West Carroll Parish; William K. Evans, Joseph Whitaker and T. P. Sparks of Tensas Parish. Drs. A. Scott Hamilton and Leon Titche, of Monroe, were guests of the Society.

Dr. L. B. Landry, Director of the East Carroll Parish Health Unit at Lake Providence was elected to membership.

Following the business session, two scientific papers were presented. The first paper was read by Dr. A. Scott Hamilton, the subject being "Orthopedic Treatment in Infantile Paralysis." This paper was discussed by Drs. Whitaker, Stevens and Hamilton. A paper, "Some Remarks on the Formation of a Kidney Stone" was then read by Dr. T. P. Sparks of Newellton. This paper was discussed by Drs. Aymond, Hamilton and Sparks.

The next meeting of the Society will be held at Lake Providence on July sixth.

William H. Hamley, M. D., Sec.

ST. LANDRY PARISH MEDICAL SOCIETY

A meeting of the St. Landry Parish Medical Society was held in Opelousas on June 10, 1937. The meeting, which was a business session, was well attended. Dr. Claude A. Martin, of Welsh, Councilor of the Seventh Congressional District, was present. Drs. Willie Littell and E. L. Landry were admitted to membership.

The following officers were elected for the year 1937: President, Dr. S. J. Rozas; Vice-President, Dr. L. Lazaro; Secretary-Treasurer, Dr. O. J. Bienvenu.

O. J. Bienvenu, M. D., Sec.

BI-PARISH MEDICAL SOCIETY

A meeting of the East and West Feliciana Bi-Parish Medical Society was held in Jackson, Louisiana, on June second. Following the business session, Dr. James T. Nix, guest speaker from New Orleans, presented an interesting and instructive paper on cancer. Dr. Manuel Garcia, also of New Orleans, assisted Dr. Nix with motion pictures illustrating the paper. General discussion by the members of the Society ensued.

Drs. Nix and Garcia were elected honorary members of the Bi-Parish Society.

E. M. Toler, M. D., Sec.

VERMILION PARISH MEDICAL SOCIETY OFFICERS 1937

President: Dr. J. T. Abshire, Kaplan.
Vice-President: Dr. Leo Saporito, Kaplan.
Secretary-Treasurer: Dr. A. A. Comeaux, Abbeville.
Delegate: Dr. J. T. Abshire, Kaplan.
Alternate: Dr. Leo Saporito, Kaplan.

LAFAYETTE PARISH MEDICAL SOCIETY OFFICERS 1937

President: Dr. A. R. Trahan, Lafayette.
Vice-President: Dr. F. H. Davis, Lafayette.
Secretary-Treasurer: Dr. R. S. Hernandez, Duson.
Delegate: Dr. O. P. Daly, Lafayette.
Alternate: Dr. J. D. Hutchins, Lafayette.

FIFTH INTERNATIONAL CONGRESS OF RADIOLOGY

Dr. Arthur C. Christie, Washington, D. C., president of the Fifth International Congress of Radiology, which will meet in Chicago, September 13, 17, inclusive, says it will be the first time that an international congress of this branch of medi-

cine—the diagnosis and treatment of injury and disease by roentgen rays and radium—has ever been held in America. The Congress will be attended by at least 2,000 delegates and visitors from all parts of the United States and probably 500 delegates from thirty nations in Europe, North and South America, and Asia.

Honorary vice-presidents of the Congress are Dr. George E. Pfahler, of Philadelphia, Pennsylvania; Dr. James Ewing, of New York City, and Dr. William D. Coolidge, of Schenectady, New York.

LOUISIANA SOCIETY OF GASTRO-ENTEROLOGY

On May 10, 1937, the Louisiana Society of Gastro-enterology, an affiliated chapter of the National Society for the Advancement of Gastro-enterology, was organized. The following officers were elected: Dr. A. L. Levin, President; Dr. Herbert Weinberger, Vice-President; Dr. Louis Ochs, Jr., Secretary-Treasurer.

Drs. A. L. Levin and J. Ross Veal were elected delegates to the National Convention to be held in Atlantic City, June 9-11, 1937.

AMERICAN MEDICAL ASSOCIATION

The following are some of the doctors from Louisiana who attended the meeting of the American Medical Association held in Atlantic City, June 7-11, 1937: Drs. Charles A. Bahn, Elizabeth Bass, George Battalora, Merrill C. Beck, Oscar W. Bethea, Clyde Brooks, Charles L. Brown, Donovan C. Browne, W. R. Buffington, Sam C. Cohen, Isidore Cohn, L. R. DeBuys, B. J. DeLaureal, Theodore J. Dimitry, George H. Hauser, Joseph S. Hebert, J. K. Howles, Edwin H. Lawson, Maurice Lescale, A. L. Levin, Urban Maes, Rudolph Matas, John H. Musser, Alton Ochsner, Joseph A. O'Hara, Walter J. Otis, Peter B. Salatich, John T. Sanders, W. H. Seemann, Robert A. Strong, D. N. Silverman, H. Theodore Simon, R. W. Todd, M. T. Van Studdiford, Emmerich von Haam, H. W. E. Walther and E. L. Zander, New Orleans; R. E. Dupre, Ville Platte; R J. Spedale, Plaquemine; M. S. White, Barksdale Field; Marion H. Foster, Alexandria; Paul D. Abramson, Shreveport; James Q. Graves, Monroe; Stakely Hatchette, Lake Charles; Thomas A. Dekle, Jonesboro; W. M. McBride, Hodge, and C. S. Sentell, Minden.

NEWS ITEMS

Professor C. C. Dauer, of the faculty of the Graduate School of Medicine of The Tulane University of Louisiana, addressed the meeting of the National Tuberculosis Association held in Milwaukee, Wisconsin, May 31 to June 3, on "Sex Differences in Tuberculosis Mortality." Following this meeting Professor Dauer will carry on a special study of tuberculosis in Michigan, New York, and other states.

Surgeon William L. Smith, has been directed to proceed from New Orleans to Washington, D. C., for temporary duty for a period of about three weeks, beginning June 23, 1937, U. S. Public Health Service Dispensary, and return to station upon completion of the temporary duty.

THE AMERICAN COLLEGE OF PHYSICIANS

The twenty-second Annual Session of the American College of Physicians will be held in New York City, with headquarters at the Waldorf-Astoria Hotel, April 4-8, 1938.

Dr. James H. Means, of Boston, is President of the College, and will have charge of the program of general scientific sessions. Dr. James A. Miller, of New York City, has been appointed General Chairman of the Session, and will be in charge of the program of clinics and demonstrations in the hospitals and medical schools and of the program of Round Table Discussions to be conducted at headquarters.

PAN AMERICAN MEDICAL ASSOCIATION

The Pan American Medical Association will hold its Seventh Cruise-Congress on the "Queen of Bermuda." The ship will sail from New York on January 15, 1938 and will arrive back on January 31. Four and a half days will be spent in Havana, where the main part of the Congress will be held. From Havana, the ship will go to Port au Prince, Trujillo City (Santo Domingo), San Juan (Puerto Rico) and return to New York.

AMERICAN CONGRESS OF PHYSICAL THERAPY

Announcement is made of the sixteenth annual clinical and scientific session of the American Congress of Physical Therapy, September 20-24, 1937 at the Netherland Plaza Hotel, Cincinnati. The program includes many special features; sectional meetings in the specialties, symposia on short wave diathermy, hyperpyrexia, electrosurgery. Fever therapy and the treatment of vascular diseases occupy an important place and will be discussed by prominent workers in the field.

Physicians, their technical assistants, and nurses working in institutional departments of physical therapy are urged to attend this important session. It undoubtedly will be one of the outstanding medical gatherings of the year. There will be no registration fee.

HEALTH OF NEW ORLEANS

The Department of Commerce, Bureau of Census, reports that for the week ending May 16, there were 142 deaths in the City of New Orleans,

of which 86 were in the white race and 56 in the negro. Fifteen of these deaths were in infants under one year of age. For the week ending May 22, there was one less death than the preceding week, but the ratio was somewhat different, being 74 white and 67 negro. The infant mortality rate was practically the same. For the week ending May 29, the number of deaths increased to 156, of which 89 were white and 67 negro. The infant mortality was the same as that of the preceding week. For the week ending June 5, the number of deaths fell to 147, of which 97 were white and 50 negro. There were seventeen deaths in infants under one year of age this week. The number of deaths in the three year period for the corresponding week averaged 144. So far the death rate in the city is considerably smaller than it was in 1936. There have been approximately 50 less deaths than during the first 22 weeks of the preceding year.

INFECTIOUS DISEASES IN LOUISIANA

Dr. J. A. O'Hara, Epidemiologist for the State of Louisiana, has furnished us with the weekly morbidity reports for the state, which contain the following summarized information: For the week ending May 15, the following diseases were reported to the State Board of Health in numbers greater than 10. Pneumonia led the list with 55 cases, followed by 33 of syphilis, 32 of cancer and pulmonary tuberculosis, 20 of gonorrhea, 18 of scarlet fever, 17 each of influenza and malaria, 13 of typhoid fever, 12 of diphtheria and 11 of measles. The typhoid fever cases were scattered throughout the state. For the week ending May 22, syphilis had gone to the front with 65 cases recorded, followed by 38 of pneumonia, 31 of gonorrhea, 30 of pulmonary tuberculosis, 17 of typhoid fever, 14 of malaria, 12 of cancer, 11 of scarlet fever and 10 of diphtheria. Of the rare diseases, a case of poliomyelitis was reported from Caddo Parish and two cases of undulant fever from New Orleans. The respiratory tract infections were way ahead of all reported diseases for the week ending May 29, with 54 cases of pulmonary tuberculosis and 53 cases of pneumonia sent in to the Bureau of Epidemiology. Other diseases which occurred in double figures included 26 cases of malaria, 21 of cancer, 17 of syphilis, 14 of typhoid fever, 13 each of diphtheria and influenza, 11 of whooping cough. One case of tularemia was reported from Richland Parish and one case of undulant fever from Iberia Parish. The succeeding week, pneumonia was still on the increase, while pulmonary tuberculosis, the next most frequently reported, was way down. There were reported 67 cases of the former and 28 of the latter. There were also 20 cases of cancer and 15 each of malaria, scarlet fever and typhoid fever. Except for pneumonia, in this week, the reported diseases were few in number and the number of cases reported was small. One case of poliomyelitis was reported from West Carroll Parish. For the twenty-third week of the year, ending June 12, syphilis again regained the lead with 62 cases. There was a slight drop in the incidence of pneumonia as the names of 56 patients only were sent in to the reporting office. Other diseases included 48 cases of gonorrhea, 41 of pulmonary tuberculosis, 36 of malaria, 22 of cancer, 14 of influenza, 13 of diphtheria and 10 of typhoid fever. One case of smallpox was discovered in Caldwell Parish. Two cases of poliomyelitis were reported, one from Orleans and the other from St. Helena. One case of typhus fever, a delayed report, was sent in from Jefferson Davis.

RUSSELL EDWARD STONE, M. D.

The many friends of Dr. Stone were shocked to hear of his death on Friday, June eighteenth, as a result of complications following acute appendicitis.

Dr. Stone was born in Missouri, entered the University of Buffalo, and, subsequently, attended Vanderbilt and the Unversity of Pennsylvania. Dr. Stone served in the United States Army during the World War. He was connected with the Touro Infirmary, where, for some years, he had been associated with Dr. Matas. In the last few years of his life, Dr. Stone was one of the outstanding surgeons. Never a very prolific contributor to medical literature, nevertheless, he was a keen student of surgery and had a large surgical practice.

WOMAN'S AUXILIARY

Louisiana State Medical Society

President—Mrs. George D. Feldner, New Orleans.

President-Elect—Mrs. Frederick G. Ellis, Shreveport.

First Vice-President—Mrs. Joseph P. Brown, Monroe.

Second Vice-President—Mrs. Walter Moss, Lake Charles.

Third Vice-President—Mrs. Robert Bernhard, New Orleans.

Fourth Vice-President—Mrs. E. A. Campbell, Homer.

Recording Secretary—Mrs. William B. Heidorn, Shreveport.

Treasurer—Mrs. Cassius L. Peacock, New Orleans.

Parliamentarian—Mrs. John T. Crebbin, Shreveport.

Corresponding Secretary—Mrs. Aynaud F. Hebert, New Orleans.

WELCOME TERREBONNE PARISH

Terrebonne Parish just recently has organized. We welcome them into the auxiliary and hope to hear from them soon.

ORLEANS PARISH

The Orleans Parish Auxiliary officers for the year 1937-1938 are:

President—Mrs. Jules Myron Davidson.
President-Elect—Mrs. C. Grenes Cole.
First Vice-President—Mrs. Ernest Allgeyer.
Second Vice-President—Mrs. Asahel J. Hockett.
Third Vice-President—Mrs. H. Theodore Simon.
Fourth Vice-President—Mrs. H. Vernon Sims.
Treasurer—Mrs. John S. Dunn.
Recording Secretary—Mrs. Willard Wirth.
Corresponding Secretary—Mrs. Charles L. Brown.
Publicity—Mrs. John Oakley.
Parliamentarian—Mrs. Anees Mogabgab.
Historian—Mrs. Jonas Rosenthal.

Of interest to our members is the class in Home Hygiene and Care of the Sick which is conducted by the New Orleans Chapter of the American Red Cross. The class is open to all auxiliary members.

Mrs. John Oakley,
Publicity Chairman.

An Executive Board meeting of the State Auxiliary was held at the home of the President, Mrs. George D. Feldner, on Wednesday, June ninth. Many important activities were discussed and the State Emblem was adopted, Louisiana being the first state to adopt the Emblem.

Mrs. Lucian W. Alexander, Chairman,
Press and Publicity.

BOOK REVIEWS

Physiology in Health and Disease: By Carl J. Wiggers, M. D. 2d ed. Philadelphia, Lea and Febiger, 1937. pp. 1124, 191 illus. Price, $9.00.

The second edition shows improvement over the first. It has been thoroughly revised, considerably rewritten and brought up to date. Many errors crept into the first edition. Most of these have been corrected. It is unkind to call attention to the obvious, but there is an instance on p. 210 in which olfactory stimulation is referred to the accessibility of substances to the superior *auditory* meatus. Just above there is an error in tense. The book is a storehouse of useful information. It deals essentially with applied physiology based on general principles.

HENRY LAURENS.

Trauma and Disease: Edited by Leopold Brahdy, B. S., M. D., and Samuel Kahn, B. S., M. D. Philadelphia, Lea and Febiger Company, 1937. pp. 613. Price, $7.50.

This is an unusual book. The list of contributors is sufficient guarantee that the contents represent judgment based on experience. Each chapter is a monograph on the subject treated. The carefully compiled bibliography makes the book invaluable as a reference work. It is a welcome departure in book making.

Every student of traumatic surgery will do well to consult this volume frequently as he will find its pages replete with information which ordinarily he would have to search a great amount of literature to obtain.

The book is well conceived, well compiled and well written.

ISIDORE COHN, M. D.

Thyroid and Its Diseases: By J. H. Means, M. D. Philadelphia, J. B. Lippincott Company, 1937. pp. 602. Price $6.00.

This book is of value because it affords a satisfactory survey of this field along with the author's views as based upon experience in the Massachusetts General Hospital Group. It is, therefore, no dry as dust compendium of knowledge bearing upon the thyroid. Dr. Means has succeeded in giving his treatise a personal flavor thus adding to the interest in reading and increasing the value of his work. Of particular interest is his disagreement with Plummer's theory of the two product thyroid secretion. Plummer, as will be recalled, has held that, in exophthalmic goiter, the thyroid gland is making not only an excess of hormone but also a chemically abnormal hormone, whereas in toxic adenomatous goiter there is only an excess of the normal hormone. Means says, "It occurs to us, however, that the differences in pictures may as well be due to differences in persons afflicted as to differences in hormone. Let us call the unknown cause of spontaneous thyrotoxicosis x. Then it is not unreasonable to suppose that x acting over a long period of time in a person past forty with pre-existing nodular goiter and arteriosclerosis may have quite a different effect than when it suddenly strikes a younger per-

son with a previously normal thyroid but peculiar constitution." Similarly, Means holds that in hyperthyroidism the response of the individual to the disease plays a role, though less in myxedema than in toxic goiter. He finds, however, that when the patients begin to get treatment with thyroid their behavior and symptoms begin to diverge.

The purpose of a review is to give an idea of the content of a book, and in the case of a worthwhile book to stimulate interest in it by comment, quotation and discussion. It has been the purpose of the present review to give the impression that Dr. Means' book is worth reading and digesting for anyone concerned, as we all are, in the problems related to the thyroid gland.

I. I. LEMANN, M. D.

Introduction to Medical Science: By William Boyd, M. D., M. R. C. P. (Edin.), F. R. C. P. (Lond.), Dipl. Psych., F. R. S. (Canada). Philadelphia, Lea and Febiger, 1937. pp. 307. Price, $3.50.

This little book of some two hundred and fifty pages has been written primarily for nurses, premedical students and technicians, although the medical student could find much of interest in it. The object of the book is to give an "aeroplane" view of the disease. Technical terms have been avoided as much as possible. The first section deals with the general principles of disease, the second with the diseased organ and the third with some practical applications. The book is well illustrated and the style is clear and lucid. It should appeal strongly to those for whom it is written.

RANDOLPH LYONS, M. D.

Maternity and Post-Operative Exercises: By Margaret Morris, C. S. M. M. G. and M. Randell, S. R. N., S. C. M., T. M. M. G. New York, Oxford University Press, 1936. pp. 152. Price, $2.00.

This book is a rather simple manual of calisthenics adaptable to sick and well alike. The exercises as described are accompanied by simple diagrams. The so-called special maternity exercises may be ideal, but it is rather difficult to conceive of the average pregnant woman performing this routine. However, if confined to the first trimester of pregnancy, these exercises may be of value in conditioning the patient for the remainder of her pregnancy.

ZACHARY J. ROMEO, M. D.

Senile Cataract; Methods of Operating: By W. A. Fischer, M. D., F. A. C. S. Chicago, The H. G. Adair Printing Co., 1937. pp. 150.

There are 150 pages to the third revised edition of "Methods of Operating Senile Cataract," and by actual count, 187 illustrations. The illustrations are greater in number than that of the pages. This is made possible by adopting the popular 35 mm. size picture. They depict each step of the operative procedure, and so nicely, that they could be considered a series of animated diagrams.

The author subordinates his own procedure and preferences for those of certain eminent teachers on the subject so as to obtain a more important goal, viz., to have the operation of intra-capsular cataract extraction made familiar to the ophthalmic surgeon, hoping to have him imitate and master it.

The first chapter of the book is written by Hofrat Professor Ernest Fuchs of Vienna. The second, by Professor I. Barraquer of Barcelona, Spain, and the third, by Dr. H. T. Holland of Shikarpur, Sind, India. It is only in the sixth chapter that he allows his personal likes and dislikes to enter into the problem. In this chapter he speaks of the value of the Nugent superior rectus forceps, and the picture of it shows it to have merit.

If you wish to be informed on the intra-capsular extraction technic, whether it is that of Smith, Barraquer or Knapp, this little book will reveal the information such as you would wish to learn on a visit to the great clinics throughout the world.

THEODORE J. DIMITRY, M .D.

Cataract, its Preventive and Medical Treatment: By H. Edward Davis, A. M., M. D. Philadelphia, F. A. Davis Company, 1937. pp. 155. Price, $3.00.

The author of this little volume would seek out the cause for the oncoming of the cataract and endeavor to prevent it. The book reveals him as an indefatigable worker in the field of preventive medicine and immunology.

The ophthalmologist cannot neglect to familiarize himself with the author's views. He is logical and the book he presents is a labor of years. The work of Dr. A. Edward Davis is to be encouraged. He has something to write about and possesses the ability to write. He is also a research student.

He would change the cataract status as the foremost cause of blindness, now 34.1 per cent, to a much lower level.

There are twelve chapters. The first is historical. It begins with the code of Hammurabi and concludes with immunological treatment. The beginner will enjoy chapter four wherein he deals

so thoroughly with the symptoms. Chapters five and six are of great interest to the advanced ophthalmologist. In this last chapter he speaks of the lens breathing and develops most academically the permeability of its capsule.

No one interested in the cataract problem should neglect to read this book.

THEODORE J. DIMITRY, M. D.

Synopsis of Pediatrics: By John Zahorsky, A. B., M. D., F. A. C. P., assisted by T. S. Zahorsky, B. S., M. D. St. Louis, C. V. Mosby Company, 1937. pp. 367. 2d ed. Price, $4.00.

A handy reference compend is a boon to the harassed student and the busy general practitioner, and the need for such a book is adequately filled by Dr. Zahorsky's "Synopsis of Pediatrics" in its second edition.

The plan followed in the first edition of dividing the subject-matter into sixty chapters to conform to the usual medical college requirement of sixty-hours' classroom work has been maintained, with the addition of a chapter on diseases of the special senses.

The subject of nutrition is most thoroughly covered for a book of such definite space limitations, there being seven chapters on nutrition and the feeding of well and sick infants, together with six chapters devoted to diseases of the alimentary tract. The plan of infant feeding is presented broadly without complete restriction to the author's personal solution of feeding problems. In describing artificial feeding, emphasis is placed on the nutritive ratio, i. e. the ratio of calories furnished by the protein to the calories of fat and sugar.

Among the several acidifying juices that may be added to cows' milk, the author mentions sauerkraut juice in addition to the more frequently used citrus fruit juices. Preference is given to dried milk as the food of choice in artificial feeding of infants, with acidified cows' milk second and evaporated milk third in choice.

The book is replete with excellent illustrations, many being full-page color plates. Especially informative for the student are the color plates illustrative of tonsillar exudates and the concomitant appearance of the mucous membranes of the oral cavity, together with an excellent illustration of Koplik's spots in authentic natural colors.

The chapters on the contagious diseases are brief but ample, though one regrets the omission of a detailed outline of the administration of Sauer prophylactic vaccine for pertussis. In diphtheria immunization the one-dose alum precipitated toxoid is preferred.

The ketogenic diet in the treatment of epilepsy is mentioned but not described. Treatment of pyelitis is described along the lines pursued by the older clinicians, with no reference to the mandelic acid or urological treatment of the condition. No comment is made to either condemn or approve the estrogenic treatment of specific vulvovaginitis by administration of theelin.

Notwithstanding the minor omissions, either through choice or limitation of space, the publication of a second edition of Dr. Zahorsky's manual of pediatrics is fully justified and the book should have a most enthusiastic reception among students and practitioners.

EMILE NAEF, M. D.

PUBLICATIONS RECEIVED

Angus & Robertson Limited, Sydney, Australia: Infantile Paralysis and Cerebral Diplegia by Elizabeth Kenny.

Columbia University Press, New York: Short-Wave Diathermy by Tibor de Cholnoky.

Paul B. Hoeber, Inc., New York: Clinical Reviews of the Pittsburgh Diagnostic Clinic, edited by H. M. Margolis, B. S., M. D., F. A. C. P.

Lea & Febiger, Philadelphia: The Treatment of Diabetes Mellitus, Sixth edition, thoroughly revised, by Elliot P. Joslin, M. D. (Harvard), M. A. (Yale), with the cooperation of Howard F. Root, M. D., Priscilla White, M. D., and Alexander Marble, M. D. The Normal Encephalogram by Leo M. Davidoff, M. D., and Cornelius G. Dyke, M. D. Disinfection and Sterilization by Ernest C. McCulloch, M. A., D. V. M., Ph. D.

The J. B. Lippincott Company, Philadelphia: International Clinics, Volume II, Forty-seventh Series, 1937, edited by Louis Hamman, M. D.

The C. V. Mosby Company, St. Louis: Personal Hygiene by C. E. Turner, M. A., Dr. P. H.

Charles S. Thomas, Springfield: Dr. Bodo Otto and the Medical Background of the American Revolution by James E. Gibson.

William Wood and Company, Baltimore: Elements of Orthopaedic Surgery by N. Ross Smith, M. B., Ch. M. (Sydney), F. R. C. S. (Eng.). A Brief Outline of Modern Treatment of Fractures, second edition, by Waldo Spiers, A. B. M. D. The International Medical Annual, 1937, edited by H. Letheby Tidy, M. A., M. D. (Oxon.), F. R. C. P., and A. Rendle Short, M. D., B. S., B. Sc., F. R. C. S. A Textbook of Applied Biochemistry by Frank Wokes, B. Sc., Ph. C., F. I. C.

The Williams & Wilkins Company, Baltimore: The Avitaminoses by Walter H. Eddy, Ph. D., and Gilbert Dalldorf, M. D.